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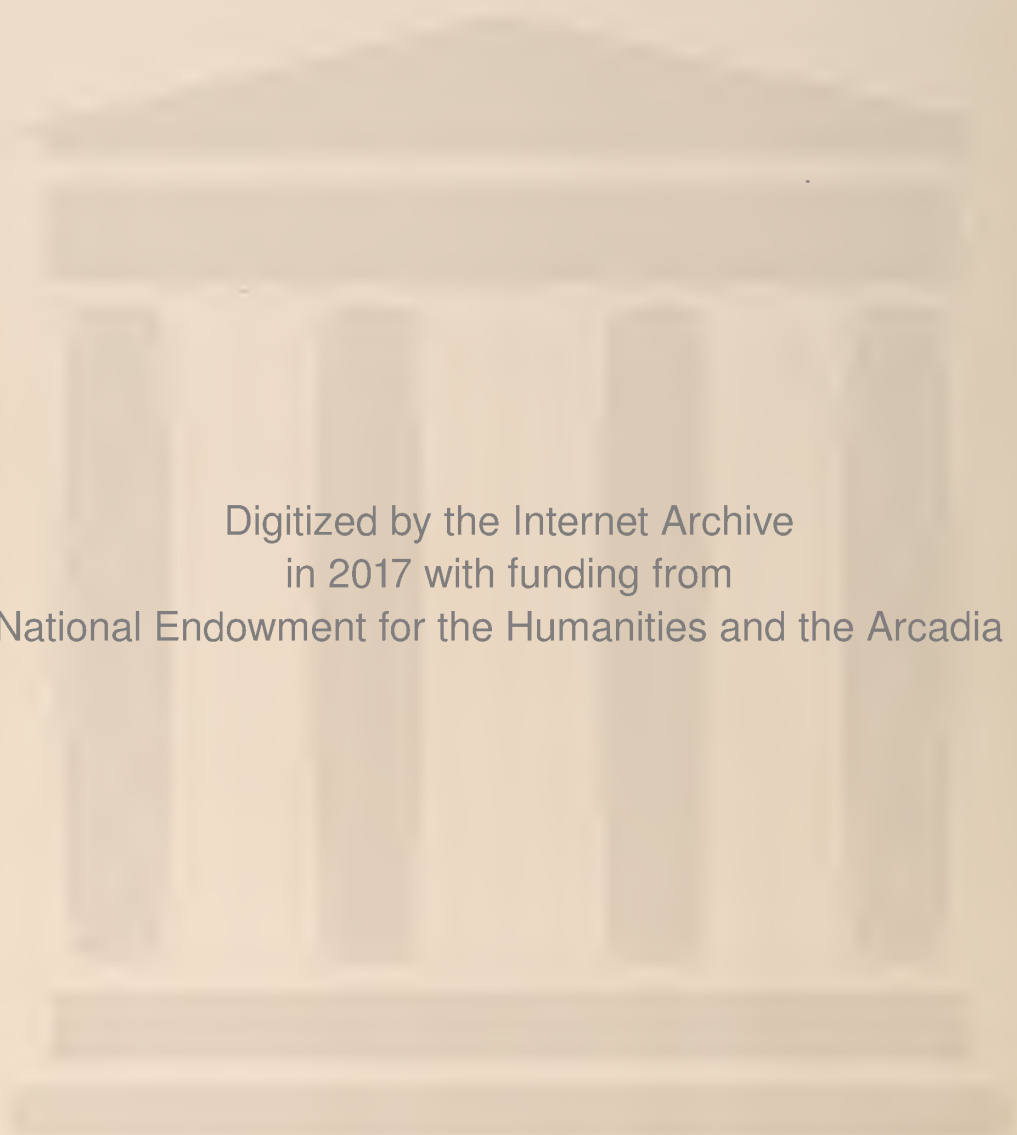












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# Virginia MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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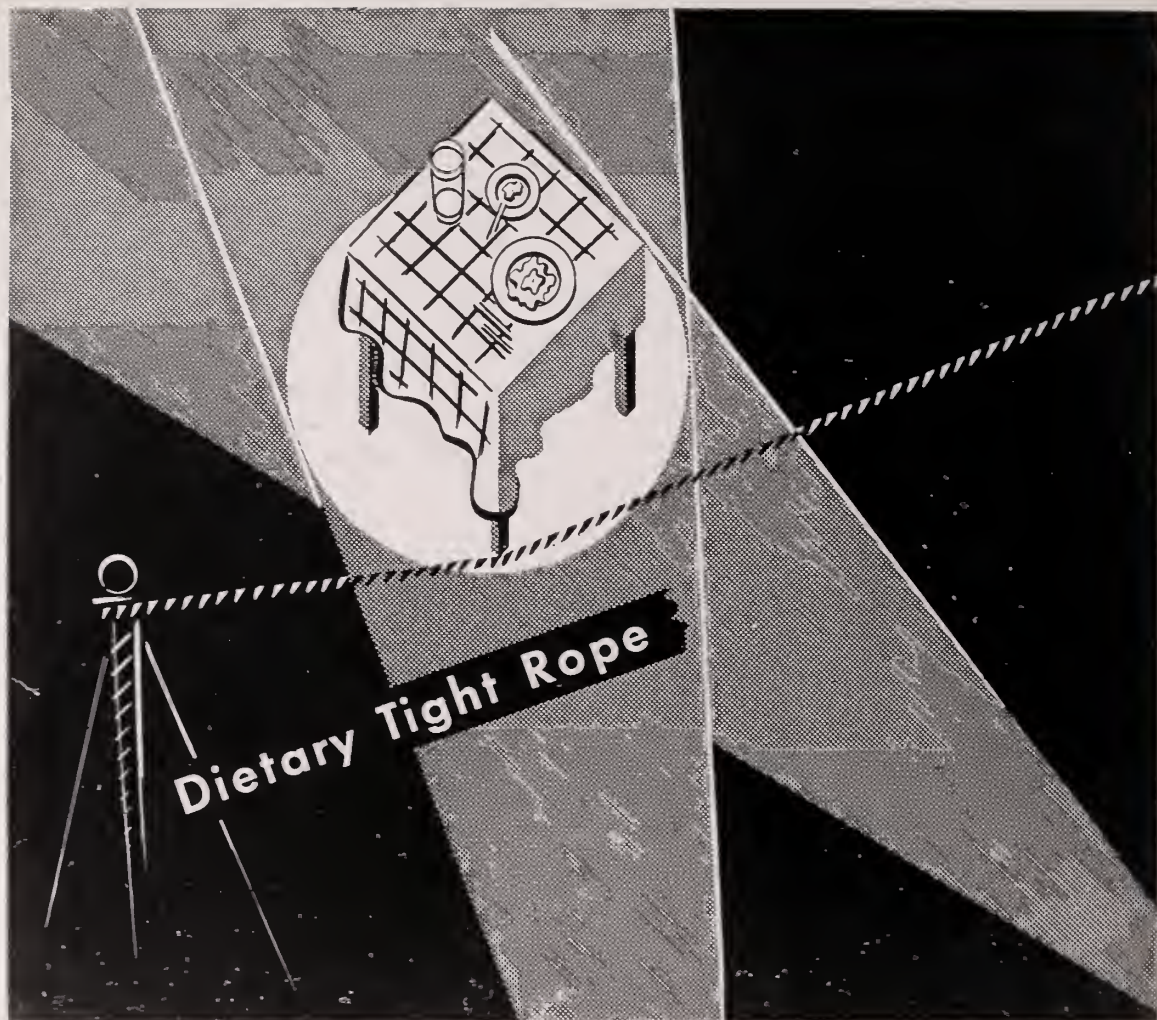
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January 1945



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## *Guest Editorial*

### The Medical Care Distribution Problem

ONE of the most stimulating and encouraging phases of our work in New Jersey is the constantly increasing demand from other State Societies for information and advice based upon our experience in developing the medical care distribution program of The Medical Society of New Jersey.

Every day there is an increase in the number of physicians who realize that organized medicine must overcome its defensive, defeatist attitude and adopt a sincere, constructive attitude looking toward a solution of this important problem. The majority of physicians who have given the problem serious thought believe that voluntary medical service plans offer the most practical approach to its solution.

In whatever direction we turn, we meet with the demand for improvement in medical care distribution by some means which will not incur financial hardship to persons of modest income or deter them from seeking adequate medical care because of costs. We can no longer say that this demand comes from starry eyed idealists. It comes from industry, labor, public opinion and from socio-political trends.

Numerous public opinion surveys conducted on a national basis and on a state basis by organizations whose reputations are above reproach, indicate that the people want this problem solved and that the majority are willing to have it solved through a national compulsory sickness insurance plan if the medical profession does not find a solution for it.

Members of our own profession occupying important and influential positions in government have warned us. Dr. Parran, Surgeon General of U.S.P.H.S., at a meeting in Kansas City about a year ago was asked, "Do you favor socialized medicine?" His answer was "No, but I ask you as doctors—what is YOUR program?" I have heard the Honorable Walter Judd, Congressman from Minnesota, speak on two occasions, once in Chicago and once before our own House of Delegates. Dr. Judd is a very highly respected physician in Minnesota and he told us "The Wagner-Murray-Dingell Bill will not pass in its present form, BUT THIS IS YOUR LAST CHANCE!"

We have been adequately warned and should recognize these warnings.

Let us assume then that we all admit the existence of this problem, that its solution is a moral obligation of the profession and that we are willing and sincerely anxious to find a solution for it.

In our approach it becomes obvious that it is an economic problem and that in its solution we must break down the economic barrier which frequently exists between the patient and the physician.



We will next concede that the problem of the indigent and the medically indigent is a combined responsibility of government and the profession and that the cost of medical care for this group will be payable by tax money. This seems non-controversial within the medical profession.

Next, we will agree that the problem of the employed, self-supporting person and his family is a responsibility of the individual, who must, in accordance with established traditional principles of American democracy, arrange to provide for himself and his family. This should be non-controversial. From here on the problem of the self-supporting group becomes controversial within the profession.

I am convinced, and I think you will admit, that many self-supporting families of low or modest income are unable to pay for the medical care necessary in unpredictable catastrophic illnesses and that many of them deny themselves adequate medical care because of costs. For this reason public opinion demands that any arrangement to provide medical care for this group be on a service basis.

I see no reason why the medical profession should enter the field of indemnity insurance. Lay insurance companies with their years of experience are best able to provide this type of insurance. It has been available for many years. It has never solved the problem and never will. It provides indemnity on the basis of technical procedures rather than on the basis of the amount of professional service which may be necessary in the adequate care of a disease which will vary in accordance with type and severity of the disease and its effect upon the individual. It does not meet the needs of our people nor does it satisfy our critics.

To make our contribution effective we must have unity within the profession. We have the support of the majority, but there are groups of skeptics who must be educated and convinced, and there are some cynics who will agree to nothing and who are usually guided by selfish motives. If every individual physician insists upon a Plan which meets his entire personal approval, then each of these physicians will be disappointed, and the Plan will fail.

Physicians and the medical profession have always been shown deference and granted many privileges. We determine who shall study medicine, the type of education they shall receive, and which physicians are to practice in our respective States under medical practice laws enacted upon our recommendations. These are privileges, and every privilege is paralleled by an obligation and responsibility. These obligations of ours cannot be enforced by the provision of any civil law. They are moral obligations to be fulfilled according to moral laws, a high moral code and high standards of ethics.

The dilemma in which medicine finds itself today is due largely to socio-economic conditions over which we have no control, but aggravated by the activities of those physicians who place their own financial welfare above the welfare of the patient, and whose method of practice is not in accordance with moral law. We cannot expect and should not encourage this minority group to participate with us in the solution of this problem, but we must have the united support of the remaining majority.

One defect of organized medicine is the failure of the average physician to interest himself sufficiently in the administrative affairs of medicine. This has resulted in the promotion of lay control of the profession and instances of leadership engineered by politically-minded minority groups of physicians and laymen. True leadership can be accomplished only by the democratic process of election within the profession. This type of leadership must first be established at a state level and acknowledged by the rank and file of the profession. Only then can we expect the election of proper leaders



at a national level and proper national policies. Who are these leaders among the 180,000 physicians of this country, upon whom will fall the responsibility of guiding the affairs of medicine during these next critical years? I would say they are the elected officers and councils of our County and State Societies and their representatives in the House of Delegates of the American Medical Association. Upon those of you who have been elected to these offices will fall the responsibility of studying this problem, and of acting as the spark plugs in promoting its solution.

Under such leadership, with the profession making a sincere effort to fulfill its moral obligations, I believe there will be little chance of our opponents convincing our Congress of the necessity for a nation-wide sickness insurance plan. If we fail to make a sustained sincere effort, then we must realize that the sworn duty of our elected representatives in government requires that they take whatever action they deem necessary for the welfare of our people.

Leadership and policies having been established, the problem becomes largely administrative and its administration must be directed and controlled by the profession if we are to assure the future independence of the profession.

In organizing and operating a Plan there will be need of assistance from some organization experienced in the field of insurance. I hope this will be your Blue Cross Hospital Plan. Any agreement with a Blue Cross Plan must be flexible and be interpreted liberally enough to meet with many unpredictable contingencies which will arise. Before making any agreement, the officers of each Plan should have faith in the integrity and fairness of the officers of the other Plan, and each Plan must have a sympathetic understanding of the problems of the other. If this does not exist there should be no agreement. Under the agreement the Medical Plan should retain its corporate identity. Each Plan should have a definitely defined scope of function and the Hospital Plan should be granted no authority over physicians, the relationship between the Medical Plan and physicians or the relationship between the physician and patient. It should be an administrative agreement only, and not interfere with the Medical Plan's privilege of determining policies.

In organizing and operating a Medical Plan, any spirit of false altruism you may entertain will soon be dispelled as you realize that you must have money in the bank to pay for the services rendered. Medicine must not attack this problem with its fingers crossed. If we do, it may bounce back and push us one step closer to compulsory sickness insurance. There must be adequate income to support reasonable fees. The Plan must be built within the present framework of medical practice, provide free choice of physician and patient, free enterprise and personal initiative of the physician, maintain high standards of care and provide adequate income to the profession.

A discussion of our Plans in New Jersey for the indigent and medically indigent is not within the scope of this paper. In presenting Medical-Surgical Plan we do not want to appear dogmatic, or as inferring that we have the right answers, or that the solution of our problem is adaptable to the local problem in Virginia. The statistical material we present has been of advantage to us in guiding and following our progress to date but is not necessarily a barometer indicating our future experience as altered by changing underwriting policies or by mistakes, or by uncontrollable changes occurring during the coming reconversion in industry or the effect on our maternity and general experience by the return of 10 million men now in military service.

Medical-Surgical Plan has been in operation for 27 months. It provides benefits toward payment for medical, surgical, obstetrical, consulting, anesthesia services and

the services of a surgical assistant rendered in hospital. We include benefits for medical care because we feel that adequate care is not possible without it. It is a new phase of sickness insurance and our experience should be of value to any group contemplating a new Plan. The total cost of medical is less than we anticipated.

The subscription rate is 75 cents per month for the single person contract and \$2.00 per month for the family contract including all children under 18 years of age. Our 2,900 Participating Physicians deem as payment in full the amount payable by the Plan for services rendered in hospital to patients admitted for semi-private or ward hospital accommodations. Payments for services rendered patients admitted for private room accommodations are considered indemnity against the physician's regular fee and the patient is liable for any balance. Hospital Service Plan of New Jersey distributes our contracts, does our billing and collections and general accounting. For this service we pay them 12 per cent of our monthly earned income. The Plan is self-supporting, has paid all claims and operating expenses from its earned income and accumulated modest reserves. Fees are exemplified by: medical, \$5.00 for initial visit and \$3.00 for subsequent daily visit; surgical, appendectomy \$100, complete hysterectomy \$150, inguinal hernia repair \$75.00, consultations \$10.00 and other fees consistent with these examples.

Income per person is the basic income unit, particularly important if family contracts are to include all eligible dependents regardless of number. Our income per person has remained constant at \$0.67 cents per month. It is the yield obtainable by our subscription rate in New Jersey where the average family of 3.8 persons is buffered in the Plan by an enrollment containing 42 per cent of single contracts. It might not apply in your Plan because of differences in the size of the average family, different underwriting policies and difference in the percentage of single persons in industry.

The second, and most important factor, is the percentage of persons enrolled in each group. In groups with enrollments of 30 per cent of employees our claim costs have been 67 per cent of income from the groups, while in groups with 75 per cent enrollment the cost has been 44 per cent of income. Claim costs rise as our groups become eligible for tonsillectomies and obstetrical care. The higher the percentage of enrollment the more favorable is the cross section of health in the group.

The hospital admission rate to general hospitals among the general population of New Jersey is 77 per thousand per year. Our admission rate from January to July 1944 was 86. In July it was 104 and in August 113 due to large number of tonsillectomies and elective gynecology during the school vacation period. (In September with the opening of schools the rate fell to 79.) The difference between this normal rate and our rate is due to the admission to hospital from among our subscribers of many persons who would not otherwise have entered hospital for treatment because of costs. We are improving medical care distribution and are developing a new source of income for the profession.

The number of patients cared for in semi-private rooms is important to us as our Participating Physicians accept as complete payment the amount payable by the Plan for their care. This basis of payment has caused some difficulties and will be changed in our new contract effective November 1st to an income-level basis. (Complete care will be provided single persons with incomes of \$2,000 or less, husband and wife with incomes of \$2,500 or less, families with incomes of \$3,000 or less. Above these incomes the Participating Physician will charge his regular fee and credit the schedule toward the bill, looking to the patient for the balance, if any.)

### OPERATING COSTS

Your operating costs will depend to a large extent upon your agreement with your Blue Cross Plan. Whatever the actual cost will be for their services, it will be less than it would cost you otherwise to duplicate their services. Costs will decline as you increase your enrollment. It should eventually be no more than the cost of operating the Blue Cross Plan. During our first 6 months of operation our operating costs totalled 51.2 per cent of our earned income, of which we assumed 39.2 per cent and paid the Hospital Plan 12 per cent. During the year 1943 this total was reduced to 23.9. For the six months of 1944 it has totalled 19 per cent and in July 1944 was 17.7 per cent. We have paid all of our own expenses and the \$5,000 donated by the Society for this purpose remains intact.

### INCOME TO THE PROFESSION

Assuming the population of New Jersey was enrolled as under Wagner Bill Plan and 4,500 physicians in practice.

Population	Monthly Income per person	Monthly Income of Plan	Per Physician per month	Per Physician per year
4 million	\$ 0.67	\$ 2,680,000	\$ 595.00	\$ 7,140.00
				(less administrative costs)

This income, for services rendered in hospitals only, may be compared to the estimated income of \$5,000 per year per physician for home, office and hospital service under a Wagner Bill Plan.

At present we must think in terms of overall income to the profession and cannot guarantee adequate fees for service. Fee for service depends upon the relationship between the size of the clinical load to be paid for and the income of the Plan. Fees will improve as the clinical load decreases from correction of pre-existing defects in the groups.

Our total payment in fees equals 80 per cent of the total amount billed to us at the regular fee of the physician. This compares favorably with the collection rate of physicians during normal economic periods.

In conclusion: We believe our experience indicates that the medical care needs of employed, self-supporting persons in New Jersey can be met on a voluntary, pre-payment insurance basis; providing the medical profession and the people are willing to attack the problem on the basis outlined in this paper.

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EDITOR'S NOTE: Dr. Scott is Medical Director of the Medical Service Administration of New Jersey.



## FURTHER INVESTIGATIONS IN THE TREATMENT OF VITILIGO

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Vitiligo has baffled dermatologists because of its obscure etiology and ineffective treatment. Research concerning the physiology of melanin metabolism has yielded many hypotheses as regards vitiligo, none of which appear to have adequately helped in their clinical application. The purpose of the present communication is to summarize briefly the literature dealing with therapy of vitiligo for the past fifteen years; to describe a new therapeutic approach with vitamins and hormones; to discuss the clinical data of 48 patients who responded favorably to this treatment; and to report 5 cases briefly, each of which represents a different type. All 48 patients had acquired vitiligo, associated with avitaminosis and endocrine imbalance. In almost every case inadequate diet was found in association with the endocrine dyscrasia. The synergistic reaction of these two clinical entities forms the basis of this therapeutic approach. Para-aminobenzoic acid and its monoethanolamine derivative\* were the principal therapeutic agents used in this series of cases. Hormone treatment varied with the specific endocrine disturbance.

*Review of the Literature.*—Hundreds of experimental and clinical reports have been published in the past fifteen years. Many papers record single or small groups of cases that corroborate or disprove newly suggested therapy. Berthold<sup>1</sup> presented a review of the literature on vitiligo up to 1929. Meirowsky,<sup>2</sup> in 1940, discussed the experimental data on melanin metabolism for the previous hundred years. For the present communication the review of the literature has been restricted to the publications which deal primarily with the treatment of vitiligo.

This treatment has been approached from both the internal and local point of view. Specifically this includes Buchki-dana,<sup>3</sup> antisyphilitic treatment,<sup>4,8</sup> injections of sodium cacodylate,<sup>9</sup> oil of bergamot,<sup>10</sup> psoralia corylifolia,<sup>11-13</sup> silver,<sup>14</sup> iron,<sup>15</sup> injections of

bismuth,<sup>16</sup> skin grafts,<sup>17</sup> copper,<sup>18</sup> light therapy alone,<sup>19-25</sup> and light therapy combined with local applications or injections.<sup>26-36</sup>

The absence of free hydrochloric acid in the stomach was considered by Francis,<sup>37</sup> from personal experience, to be a primary etiological factor. He had vitiligo accompanied by achlorhydria for many years. After taking hydrochloric acid in 15 c.c. doses at each meal for two years, Francis noted that the vitiligo areas had completely disappeared. He used this therapy on three patients, obtaining similar results. A possible explanation of Francis' results may be the favorable action of the hydrochloric acid on the synthesis and absorption of some factors of the vitamin B complex present in the ingested food.

In recent years gold therapy<sup>38-42</sup> has been employed rather extensively. Intradermal or intravenous injections of gold sodium thiosulfate, in some cases combined with local application of oil of bergamot, or with exposure to ultraviolet irradiation, have been reported to partially restore the pigment in many cases. Other authors<sup>1, 6, 8, 43-66</sup> have suggested the use of endocrine replacement therapy, because of the associated glandular deficiency in vitiligo.

In 1931 Trim and Sequeira<sup>67</sup> reported a case which could be considered as a forerunner to vitamin therapy of vitiligo. A negro, hospitalized for sixteen weeks for treatment of a fracture, was observed to have patches of vitiligo on the face which became repigmented, although no specific therapy had been instituted. The authors attributed the beneficial effect to three possible factors: rest in bed, absence of direct sunlight, and stressed better food. Later, the relationship between vitamin C and pigmentation was suggested by Cornbleet<sup>68</sup> and Riehl.<sup>69</sup> Only a year ago, the use of vitamin C in large doses, and the correction of endocrine and metabolic disorders, as well as the routine therapy with gold and local applications, was recommended by competent authorities.<sup>70</sup> The effect of para-aminobenzoic acid and other factors of the vitamin B complex in combination with hormone therapy in cases of faulty pigmentation, including vitiligo, has

\*Material for this investigation was generously supplied by Drs. Samuel Gordon and Nathan Weiner of the Endo Products Co., New York. Nigenol is the trade name employed by Endo Products.



already been mentioned.<sup>71</sup> Costello,<sup>72</sup> in February, 1943, reported the beneficial influence of the daily administration of 100 mg. of para-aminobenzoic acid in a case of vitiligo of the eyelids in a two year old child. In discussing this case Wolf<sup>72</sup> and Peck<sup>72</sup> mentioned the use of para-aminobenzoic acid in the treatment of vitiligo. Wolf observed change in pigmentation, but it was a further loss of color in the areas of vitiligo after two months' medication, while Peck did not comment on the effect of the drug on vitiligo, mentioning merely that no chromatrichial action was observed after eight months of treatment. With these exceptions, the literature makes no specific reference to the use of para-aminobenzoic acid in the treatment of vitiligo, although many authors have reviewed the role of vitamins in dermatology, and their influence on pigmentation.

*Para-Aminobenzoic Acid.*—In previous publications<sup>71,73</sup> the clinical effect of para-aminobenzoic acid on pigmentation has been described. The effectiveness of this drug in human achromotrichia, as first published by the author,<sup>73</sup> has been corroborated by DeVilbiss<sup>74</sup> and Friedgood.<sup>75</sup> More recently Brandaleone *et al*<sup>76</sup> have confirmed the chromatrichial action of para-aminobenzoic acid as observed in 2 of 7 patients who received para-aminobenzoic acid in combination with calcium pantothenate and yeast simultaneously, and their findings were editorially discussed.<sup>77</sup> Para-aminobenzoic acid *per se* is water-soluble to such a small extent that it is unsuitable for parenteral use. Its sodium and calcium salts were tried clinically on a large group of patients. Although no toxic effects were observed, these salts did not produce appreciable pigmentary changes in the areas of leukoderma during four months of treatment. After studying other derivatives, monoethanolamine para-aminobenzoic acid was investigated. It was given parenterally once or twice daily in the gluteal region, and proved to be effective clinically as will be described. Ethanolamine itself was used similarly in a representative group of patients, but proved to be ineffective.

*Discussion of Cases.*—A series of 48 cases of vitiligo was studied over a period of ten months. In this group 25 were females, and 23 males; the age variation was from ten to seventy years. In the female group 13 were premenopausal and 12 postmenopausal. The duration of the vitiligo varied from two to twenty-eight years. The cases of shorter

duration responded more rapidly than those of many years' standing. In most patients evidence of an inadequate diet for periods varying from months to years, and a history of endocrine imbalance was obtained. Fatigue, irritability, and emotional instability were almost constant. In the majority of cases, constipation, with gain in weight, and varying types of headaches were frequent. Arthritis or arthralgias were not uncommon in the detailed history of those patients. The physical examination in general revealed varying types of deficiencies, of which many cases presented classic findings consistent with hypothyroidism. Considerable variation in the distribution of the depigmented areas was observed. Leukoplakia of the mucous membranes of the mouth, atrophic changes in the papillae of the tongue, some thickening with slight coarseness and dryness of the skin, brittle nails, premature achromotrichia, subnormal oral temperature, and frequently hypotension were found in most cases in varying degrees. The basal metabolic rate was usually within normal range in the primary test, but subnormal levels were often observed in subsequent determinations. Before therapy was instituted the fasting blood sugar levels varied from slightly low to moderately high levels, a large number of patients showing marginal hyperglycemia. Routine blood counts varied, many cases showing a mild hypochromic anemia, the white cell count was usually low, but no true leukopenias were encountered. The differential smear often revealed a relative lymphocytosis. No case in this series had an eosinophilia.

In Chart I the cases are divided into sex and age groups, with division of the sexes essentially equal, 25 females and 23 males. The onset of vitiligo occurred more commonly in the first to the fifth decade of life in the female group, and in the second to the sixth decade in the male group. Among the females, 13 cases started at puberty, 12 during the menopause. Male cases, however, were seen more commonly at the climacteric age, with only 8 of the 23 cases beginning at puberty. Achromotrichia appears to be coincident with vitiligo, and practically equally distributed among both sexes: 16 females (64 per cent), 17 males (71 per cent). The slightly higher number of males may be explained by the higher incidence of male cases beginning at the climacteric age group. From these last figures the association of vitiligo with sex hormone metabolism may be as-

sumed. Chart II presents the relative incidence of endocrine dyscrasia, inadequate diet, and achromotrichia. Although photographs could be presented for many cases, those illustrating cases 3 and 4 are considered adequate for the scope of this communication.

*Method of Treatment.*—On all patients an accurate history was obtained, including complete physical examination, routine urine, blood counts,

herein. All patients were given a potent elixir of the vitamin B complex, containing more than the daily requirements of each known factor of the complex. In addition, para-aminobenzoic acid was administered in form of 100 mg. tablets three or four times daily, that is, in dosage similar to that used in achromotrichia therapy.

From three to five weeks after treatment was instituted a check-up examination was made. A care-

CHART I  
DISTRIBUTION OF AGE AMONG 48 CASES OF VITILIGO

Age Groups	FEMALES				MALES			
	No.	Onset at Puberty	Onset at Menopause	Achromotrichia	No.	Onset at Puberty	Onset at Climacteric	Achromotrichia
10-20	4	4	0	0	2	2	0	0
20-30	7	7	0	4	6	5*	0	2
30-40	4	1	3	4	3	1†	1	3
40-50	7	1	6	5	7	0	7	7
50-60	1	0	1	1	5	0	5	5
60-70	2	0	2	2	0	0	0	0
Totals	25	13	12	16	23	8	13	17

\*Sixth case: glandular complicated by diabetes mellitus.

†Third case: post-traumatic, fractured skull.

smears, fasting blood sugar, nonprotein nitrogen, and basal metabolic rates. Careful examination was made for foci of infection, particularly prostatic infection in male patients. The caloric intake of each patient was then limited and an individual diet prescribed, which was balanced with respect to carbohydrates, proteins, fats, minerals, and vitamins. The endocrine balance was established by giving such hormones as thyroid extract, estrin, androgen, or anterior-pituitary-like extract. Before the protective action of para-aminobenzoic acid against the enzymatic destruction of stilbestrol had been recognized, this synthetic estrogen had been used. It was soon observed<sup>78</sup> that many female patients were thrown into an anovulatory menstrual phase which was easily controlled, however, by two to four injections of progesterone in 5 mg. doses. Therefore, stilbestrol was not used in any of the cases reported

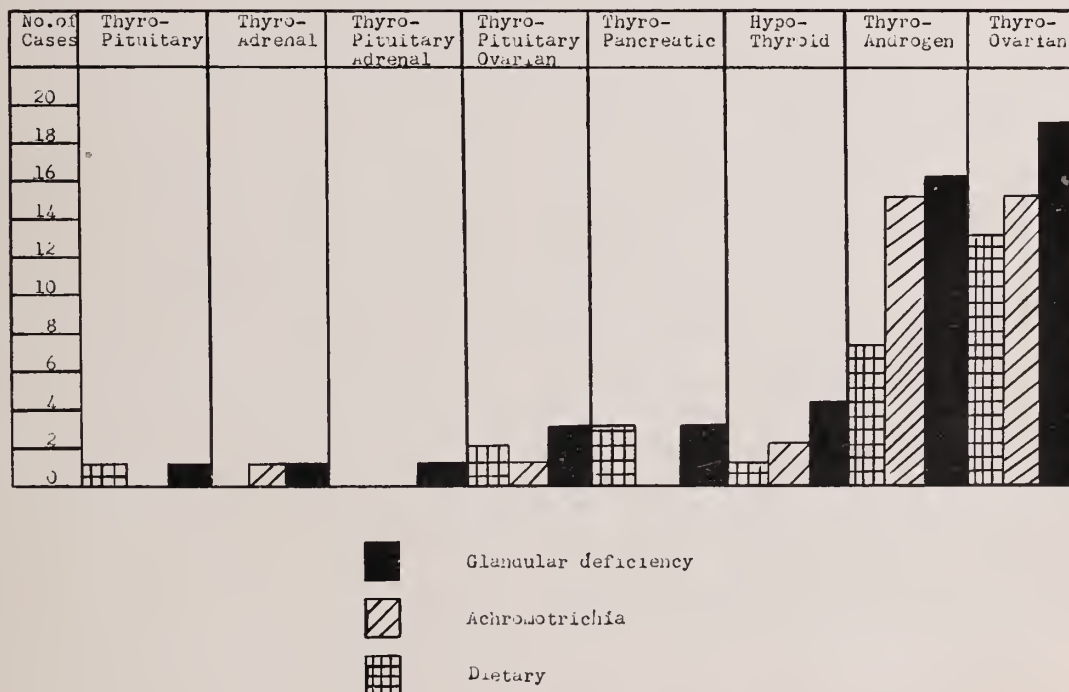
ful interval history was obtained, with special emphasis to elicit toxic manifestations. The blood counts occasionally showed a slight reduction in hemoglobin, red blood cells, or white blood cells. During this study, all as well as individual medications of the regime were omitted for specific intervals, to establish the agent causing these blood pictures. In a few cases para-aminobenzoic acid was felt to be responsible, but when the dose was increased to 100 mg. six times daily no appreciable change in the blood was noted.

The rate of repigmentation under oral para-aminobenzoic acid therapy was found to be slow. Some patients had been on the described regime for a period of eighteen weeks, without appreciable change in apigmentation. During a period of six to twelve weeks, some coloring of the milk white patches had been observed, such as a pinkish tinge, small islands

of pigmentation, and narrowing and fading of the marginal border. At this point parenteral monoethanolamine para-aminobenzoic acid therapy was instituted. This drug was first given in dosage of 100 mg. in 1 c.c. of doubly distilled water. Each ampoule contained 144 mg. per c.c., about equivalent to 100 mg. per c.c. of para-aminobenzoic acid. Data on the urinary output, nonprotein nitrogen, liver and renal function, and basal metabolism

well as by the patients themselves, that new pigmentation in the depigmented areas occurred. Within four to eight weeks the milk white areas of vitiligo turned "pinkish". It was particularly striking to note the loss of the blank white color. In six to sixteen weeks after therapy was started, small islands of brown pigment were usually noted within the areas of vitiligo. From these islands streaks of pigment were thrown out, similar to the pseudopodia

CHART II. VITILIGO WITH CONCURRENT DEFICIENCIES.



showed no appreciable change during a period of ninety days. A series of 20 patients were given 45 mg. of ethanolamine parenterally, two to three times daily, over a ninety day period. This investigation was conducted to ascertain whether or not this substance was by itself the stimulant to pigmentation. No change in pigmentation, nor toxic symptoms, were noted.

The parenteral administration of monoethanolamine para-aminobenzoic acid twice daily was continued. It was preferable to give the injections in the morning and evening, and to advocate a tablet of 100 mg. of para-aminobenzoic acid to be taken orally at noon and at bedtime, making a total of 400 mg. of para-aminobenzoic acid daily.

Clinically it was soon observed by the author, as

of phagocyte cells. These streaks reached out to join distant islands of pigmentation, or joined other rays coming from the vitiliginous margins. A narrowing and fading of the illusory borders of the depigmented areas was observed. These peripheries, which had been darker in color, gradually became lighter until differentiation from the normal was impossible. In some cases the apigmented areas became erythematous, and patients complained of mild pruritis. As this subsided, new light brown pigment was observed. Some of these cases have now been under treatment for eighteen consecutive months. The results were striking after six to seven months of therapy.

No definite anatomical pattern can be described, yet certain sites responded more rapidly than others.



In most of the cases the torso was first to respond, particularly the anterior chest and the sacro-lumbar region. Invariably when there was torso involvement, a triangular patch of vitiligo, covering the fourth and fifth lumbar, as well as the first and second sacral vertebrae, was found. We have learned to use this patch as an index to therapeutic response. The region of the supra-orbital ridge, perinasal area, and perioral region responded next in rapidity. The upper and lower extremities, particularly the axillae and groins, were usually the last anatomical sites to change, although in some cases the perivaginal or scrotal, and perianal areas were even slower in regenerating new pigment. It is difficult to explain this anatomical variation, unless we accept Robert's<sup>79</sup> observations that the hair follicles are the first site for return of pigment.

#### CASES

*Case 1.* Mrs. E.T.A., a 41 year old, white housewife, was first seen on December 18, 1941, complaining of fatigue, vertigo, palpitation, and vitiligo of twenty-eight years' duration involving the entire body. Areas of vitiligo were first observed at the age of 12, eleven months after the onset of a severe gingivitis and stomatitis of unknown etiology, which persisted for six years, and necessitated a semi-solid diet. Extension of the vitiliginous areas was observed following a panhysterectomy in 1939. Physical examination disclosed areas of vitiligo throughout the face, neck, torso, and extremities. There were numerous pigmented, telangiectatic, and verrucous nevi scattered over the body. Other findings, and laboratory data, disclosed deficiencies as pointed out in the discussion of cases.

*Treatment.*—Para-aminobenzoic acid was administered orally, 100 mg., four times daily. Injections of estrin and anterior-pituitary-like hormone were given twice weekly to restore the endocrine balance. A small dose of thyroid extract was given, and an elixir B complex 5 c.c. twice daily. In addition, at the end of one month, the patient was given daily intramuscular injections of 144 mg. per c.c. of monoethanolamine para-aminobenzoic acid. One hundred and seventy-four injections of the latter were received. No toxic effects were encountered.

At regular examinations during treatment definite evidence of the return of normal pigmentation was observed, preceded by slight erythema and pruritus

in some sites. The patient noticed that scars which were milk white gradually became darker. Vitiliginous areas, previously unaffected by sunlight, became red or tanned. At examination, October 19, 1942, the areas of vitiligo were pink, and in many there was almost complete return to normal pigmentation. This was most striking at the back of the neck. On the arms and legs the patches had diminished in size, or disappeared entirely. Similar changes were noted on the abdomen, hip and iliac region. It is interesting to note in this case that although treatment was interrupted for six weeks, there was no recession in the new pigment which had formed in the areas of vitiligo, although repigmentation did not increase until therapy was reinstituted.

*Case 2.* Miss D.E.G., a 30 year old, white teacher, was first seen on January 28, 1942, presenting general symptoms of fatigue, irritability, and flushes, as well as vitiligo of twenty-one years' duration, involving the entire body. Milk white spots were first observed on both thumbs at the age of 9. Two months after the onset of the catamenia, age 15, a patch of pure white hair appeared at the mid occipito-parietal portion of the scalp, with general involvement during the past year. The vitiligo progressed rapidly for two years, and then remained latent until three years ago, when it began to spread again. Vitiligo had occurred in three generations of her family. Because of religious conviction the patient ate no meat, fish, or eggs. At the physical examination, besides definite deficiency evidence, areas of vitiligo were observed throughout the entire body, particularly marked at the axillae and inguinal regions. The scalp was vitiliginous in character immediately under the area of pure white hair, with general graying as noted above.

*Treatment.*—The patient was placed on a 3000 calorie, high vitamin diet, including meat, fish, and eggs. A small amount of thyroid extract was administered daily, and 5 c.c. of an elixir B complex twice daily. Diethylstilbestrol, 1 mg., was given orally for twenty days after the menarche. Tablets of para-aminobenzoic acid, 100 mg., were given four times daily, along with calcium pantothenate, 10 mg., orally twice daily. Six weeks later the patient was given monoethanolamine para-aminobenzoic acid, 144 mg. per c.c., parenterally twice daily, replacing two oral tablets. Because diethylstilbestrol produced



an anovulatory cycle lasting thirteen days, it was replaced by  $\alpha$ -estradiol 0.1 mg. daily. After six months of parenteral treatment the number of injections of monoethanolamine para-aminobenzoic acid was reduced to one daily, and para-aminobenzoic acid tablets were increased to three a day. Two hundred and fifty-one injections were given over a period of nine months. No toxic symptoms were encountered.

Examinations were made at regular intervals. In June, 1942, all medication was omitted for three weeks to allow a local abscess to drain. At this time the blood showed evidence of a mild hypochromic anemia, and the fasting blood sugar rose to 141 mg. per 100 c.c. One month later all treatment was re-instituted. During the next five to eleven weeks the pigmentary changes were much more rapid and pronounced than before the infection.

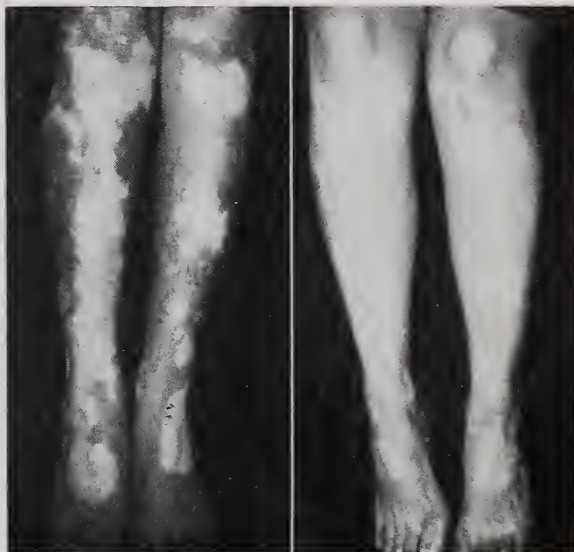
At the physical examination on February 12, 1943, the areas of vitiligo displayed marked return to normal pigmentation with almost complete disappearance of many of the patches. None of the areas showed the former blank white appearance. All were toned within normal flesh color. The apigmented areas about the nipples and areolae and the anterior chest were completely gone. Through the hips, abdomen, and back the vitiliginous areas were filled in about 60 per cent. Considerable return of pigment had occurred on the hands and feet.

*Case 3.* Miss N.G., a 23 year old, white pharmacist from Porto Rico, was first seen on January 14, 1942, presenting the usual general deficiency symptoms, with special complaints of dysmenorrhea, anorexia, dry skin and brittle nails. She had vitiligo of the entire body, especially marked on both legs. It had started thirteen years previously after a bruising accident. In the past two years slight graying of the hair had occurred. The past history was irrelevant except for mild typhoid fever at seventeen, and photophobia which had persisted since high school days. She ate practically no meat or fish. The familial history was negative, except for the father who had asthma. Examination showed, besides definite hormonal and vitamin imbalance, tiny areas of apigmentation scattered throughout the entire torso, the breasts, and areolae. The lower extremities from the feet to the knee joints had large areas of vitiligo with complete loss of pigment, and true dermatographia (Photograph I, 1-15-42). A growth of

white hair was noted through these areas of vitiligo. The line of demarcation between areas of apigmentation and normal pigmentation was clearly defined. Superficial pelvic examination disclosed vitiligo of the left side of the labia with white hair growth. Scattered over the body were a number of dark brown raised nevi, tiny flat brown nevi, and patches of raised papules and macules of an early psoriatic type.

*Treatment.*—Two 100 mg. tablets of para-aminobenzoic acid, and two intramuscular injections of

PHOTOGRAPH 1.—CASE 3. MISS G., 23 YEAR OLD PORTO RICAN PHARMACIST. VITILIGO OF 13 YEARS' DURATION.



1-15-42.  
Before treatment.

5-4-43.  
After sixteen months treatment.

144 mg. per c.c. of monoethanolamine para-aminobenzoic acid were given every day. In addition oral and parenteral medication was given to restore the endocrine balance. An elixir B complex, 5 c.c., was taken three times daily. After four months of this regime the number of injections of monoethanolamine para-aminobenzoic acid was reduced to one daily, until a total of two hundred and fourteen had been received.

Marked improvement in the vitiligo and the patient's general condition was observed within ten weeks after treatment was instituted. Each successive examination showed progressive improvement in the vitiligo. In July, 1942, a tonsillectomy was performed. Physical examination on September 1, 1942, revealed that the vitiligo throughout the body and torso was completely repigmented, to such an

extent that there was difficulty in distinguishing any of the areas. Patches on the hands and arms were almost entirely filled in. The lower extremities showed definite improvement, with darkened areas, erythema, and islands of pigmentation, but there was still a distinction between the normal dark skin and the areas of improved vitiligo.

The patient was again examined on April 24, 1943. During the intervening period she had taken her medications only spasmodically, and had received no injections. She complained of recurrence of the general symptoms, but despite the lack of medication there was no regression in the areas of

PHOTOGRAPH 2.—CASE 4. MR. P., 49 YEAR OLD EXECUTIVE. VITILIGO OF 4 YEARS' DURATION.



6-20-42.  
Before treatment.

2-2-43.  
After seven months treatment.

vitiligo. On the other hand, they showed some repigmentation, particularly on the upper and lower extremities. Therapy was reinstituted, and after only two weeks a still further improvement was observed (Photograph I, 5-4-43). At no time were any toxic manifestations from therapy observed.

*Case 4.* Mr. R. J. P., a 49 year old, white, married executive, was first seen on June 20, 1942, presenting vitiligo and achromotrichia of three years' duration. In 1939, three years after a severe emotional upset, areas of vitiligo were observed periorally, extending in the next three months over the face, hands, torso, and legs, and accompanied by graying of the frontal, temporal, and occipital portions of the hair. Coincidentally, the usual general symptoms developed, with loss of appetite, urgency, frequency, nocturia, and diminished libido. His familial, past, and marital histories were irrelevant, except for a period of glycosuria lasting eighteen

months, at the age of 15. Physical examination was negative except for definite avitaminosis and hormone dyscrasias, and the skin picture. Areas of vitiligo occurred throughout the body, concentrated particularly about the hair line in the frontal region, the forehead, around the nose, lips, and chin (Photograph II, 6-20-42). A large area of vitiligo involved the entire left side of the scrotum, this side being covered with pure white hair in contrast to the dark brown hair of the right side. Examination of the anus revealed perianal vitiligo. There was marked absence of pigment about the nipples and areolae.

*Treatment.*—The patient was put on a regime including a 1200 calorie diet, thyroid extract 0.065 Gm. daily, an elixir B complex 5 c.c. twice daily, diethylstilbestrol 0.1 mg. daily, para-aminobenzoic acid, 100 mg., four times a day. He was given two injections daily of monoethanolamine para-aminobenzoic acid 144 mg. per c.c. parenterally, omitting one tablet from the oral dosage for each injection received. Prostatic massages were given irregularly. A total of one hundred and thirty-three injections of the monoethanolamine para-aminobenzoic acid was received in a seven month period.

In December, 1942, the patient contracted a mild upper respiratory infection, followed by frequency, urgency, increased nocturia, and pain at the end of coitus. Rectal examination revealed slight edema of the left lobe of the prostate, edema and tenderness of both vesicles. The white cell count was 10,200, and fasting blood sugar 139 mg. per 100 c.c. Prostatic secretion was light brown, and microscopically revealed 40-50 white blood cells, and occasional red blood cells, per high powered field. The patient was given a short course of sulfonamides, local treatment, and anterior-pituitary-like hormone 1000 international units subcutaneously twice per week. All other medications were omitted during this period. The vesicular symptoms disappeared in ten days. At this time therapeutic carbon radiation was instituted for the vitiligo. The lamp was focused essentially on the head, neck, and chest.

Physical examination on January 30, 1943, revealed a marked improvement of all the general symptoms. The skin was more moist and of better tone. The striking contrast of normal dark skin against blank white vitiliginous skin was absent. The areas about the forehead, nose, perioral region, and chin were



# Medical Society of Virginia Cancer Committee

Room 383, Medical School Building, University, Va.

January 1, 1945

## It Can and Does Happen Here

A 36 year old man sought his physician's advice because of a slightly bloody mucopurulent nasal discharge of several weeks duration. On a diagnosis of sinusitis made without examination of the nasopharynx, the patient was treated for four months with various nose drops and sprays. As the discharge only became more profuse and bloody, he was at length referred to an otolaryngologist who discovered a bulky ulcerated tumor high in the nasopharynx, an epidermoid carcinoma.

A 49 year old woman complaining of intermenstrual spotting received hormonal therapy for one year but no pelvic examination. As the spotting gradually developed into hemorrhage, she sought another physician's advice. Pelvic revealed a previously unsuspected carcinoma of the cervix, League of Nations IV.

A 53 year old man had a hemorrhoidectomy performed for "piles which had been bleeding for six months." After operation, the bleeding persisted and he was referred to a proctologist. At rectal examination, *the first he had had*, a carcinoma was discovered in easy reach of the palpating finger.

Since most cancer can be cured if diagnosed early and only if diagnosed early, the fate of the cancer patient is in the hands of the first doctor whom he consults. The responsibility of that doctor is a heavy one. The oversights quoted above are extreme, but similar histories are being recorded all too frequently in cancer clinics throughout the state. We of the medical profession must recognize the fact that failure to discover cancer early is not always due to the patient's delay in seeking medical advice. Through the activities of such organizations as the Field Army, the Virginia Cancer Foundation, and the American Cancer Society, the lay public is being taught the early signs and symptoms of cancer. No doubt you have had patients present themselves to you for advice concerning such signs and symptoms, or for periodic physical examination, because of something said by a speaker or published in literature sponsored by one of these groups.

Your Cancer Committee urges you to be "cancer conscious" and include the following procedures in every physical examination you do:

1. Examine skin for new growths, bleeding ulcerations, or scaly dry crusts. (If suspicious lesion is found, don't wait—biopsy at once.) Black moles need the attention of an expert. If you don't qualify as such, refer your patient immediately to someone who does.

2. Check cervical, supraclavicular, axillary, and inguinal areas for glandular enlargement.

3. Examine lips, buccal, and pharyngeal membranes for ulceration or nodules.

4. Refer any patient with unexplained hoarseness of over one weeks duration to an expert laryngologist.

5. Examine with particular care the breasts of female patients for lumps and for serous or bloody discharge from the nipple but don't neglect the male breast! One out of every 100 breast carcinomas is in a man.

6. Include a chest X-ray in your routine examination. Cancer of the lung and mediastinal tumors are frequently of insidious onset.

7. Palpate relaxed abdomen thoroughly.

8. Inquire carefully into digestive disturbances. If symptoms cannot be relieved in ten days or two weeks, advise X-ray examination.

9. Do a digital rectal examination routinely and check the stool for occult blood. If rectal bleeding is discovered, insist on proctoscopy and X-ray with barium enema.

10. Do a bimanual pelvic examination routinely. Note mobility, size, and shape of the uterus; check adnexa for enlargement or tenderness. Visualize the cervix carefully with a speculum. If there is a history of abnormal bleeding and this examination does not explain it, advise diagnostic curettage.

**Don't trust your memory! Detach and file this bulletin for future reference. BE CANCER CONSCIOUS AND HAVE A CLEAR CONSCIENCE. Remember, cancer is second only to cardiovascular disease in the list of causes of death.**





pink brown in color, blending nearly completely with the normal skin (Photograph II, 2-2-43). Areas of leukoderma throughout the body were of a general pink tinge, with numerous small islands of pigmentation which had already started to coalesce. The scrotal area showed a well advanced return to normal pigmentation, the white hairs having acquired a golden brown color. No toxic effects were encountered during the course of therapy. Possibly the results described in the last physical examination were enhanced by the light therapy, thus corroborating Rothman's<sup>80,81</sup> observations.

*Case 5.* Mrs. A.L.E., a white, 64 year old housewife, was first seen on May 11, 1942, complaining of vitiligo of two years' duration accompanied by general distress, irritability, joint pain, and loss of appetite. For two years the patient's diet was faulty, and she ate no meat. Physical examination disclosed marked evidence of thyro-ovarian deficiency, and avitaminosis. On the skin there were areas of vitiligo about the mouth, eyes, and axillae, under the breasts, throughout the inguinal regions, and around the wrists, ankles, and knees.

*Treatment.*—The patient was placed on a regime of one intramuscular injection daily, of 144 mg. per c.c. of monoethanolamine para-aminobenzoic acid. Tablets of para-aminobenzoic acid, 100 mg. each, were given three to four times daily. Oral and parenteral medication was administered to restore endocrine balance. A total of fifty-five intramuscular injections of monoethanolamine para-aminobenzoic acid was received in nine months. No toxic effects were encountered.

One month after therapy was instituted the general condition was greatly improved, with definite darkening of the areas of vitiligo. The patient noticed that blanched white areas, previously unaffected, became reddened on exposure to sun. On physical examination, March 2, 1943, the skin was moist and of better tone. Many areas of vitiligo had disappeared, and others showed marked pigmentation, or were definitely pink, with less pronounced line of demarcation. In this case, also, therapy was interrupted for a period of several weeks, with no apparent recession of the newly formed pigment.

#### DISCUSSION

The detailed histories of the vitiligo patients in this series reveal the frequent occurrence of dietary

changes, produced by disease, faulty metabolism, or diminished food intake. A continued reduction in diet ultimately leads to further metabolic disturbance which may change the bacterial flora within the gastro-intestinal tract, resulting in impaired bacterial synthesis which in turn may interfere with absorption.<sup>82-85</sup> All 5 cases described in detail present a common pathological dietary absorption mechanism. In case number 1 a deficient diet resulted from an infected mouth of six years' duration; case number 2 had faulty food intake because of religious conviction, and apigmentation was noted in three generations of her family; case number 3, because of geographic location and national custom, had avoided meat and fish; in case number 4 interference in absorption occurred following an emotional upset; and case number 5 suddenly omitted meat from her diet after many years of incorrect dieting.

Further analysis reveals the importance of the sex hormones in the occurrence of vitiligo. In the first three cases the onset was observed at puberty. The disease was aggravated by surgical castration in the first case, in the second by beginning estrogen deficiency, and in the third by a marked endocrine imbalance. The male climacteric period marked the onset in case number 4. In case number 5 the vitiligo started at the postmenopausal period, when estrogens are apt to play an important role in vitamin synthesis and metabolism.

The influence of extrinsic contributory factors on the course of vitiligo is also evident. Such irritants as trauma, infection, pressure points and light rays seem to definitely influence the course of the disease. These are apparently only contributory or irritating factors, however, and not of prime etiologic significance. In reference to the influence of infection on vitiligo, it is interesting to note that in cases 2 and 4, local abscess in the former, and acute vesiculitis in the latter, was followed by a temporary hyperglycemia. In both instances regeneration of pigmentation was more rapid and more pronounced in the five to eleven weeks following the period of hyperglycemia, many apigmented areas filling in 50 per cent to 60 per cent more rapidly, in approximately one-fifth of the time. An explanation for the acceleration of repigmentation during the period of hyperglycemia cannot be offered at this time, although it has been observed that vitiligo is relatively rare in adult diabetics, but fairly common in diabetic children.<sup>86</sup> The influence of infec-

tion on repigmentation may be explained by the recent investigations of Landy *et al*<sup>87</sup> which showed that staphylococcus aureus organisms are capable of synthesizing para-aminobenzoic acid.

In order to obtain the maximum results parenteral and oral para-aminobenzoic acid therapy should be continuous. When interruption of the therapeutic regime does occur, there is no recession of the restored pigment, provided treatment is reinstituted within a three month period. This is evident in case 3 where therapy was stopped for six months, in cases 1 and 4 where treatment was discontinued for several weeks, and to a lesser degree in cases 2 and 5, where the interruption was of shorter duration. Although the process of repigmentation halted when therapy was stopped, there was no recession of restored pigment; when treatment was started again, repigmentation progressed more rapidly than before the interruption.

It will be noted that the specific vitamin, para-aminobenzoic acid, has been administered both orally and parenterally in all cases. Para-aminobenzoic acid, administered orally, does not maintain the necessary blood saturation, but monoethanolamine para-aminobenzoic acid, administered parenterally, liberates sufficient free para-aminobenzoic acid in the blood stream to maintain the required saturation level for a prolonged period of time. On the other hand, it is conceivable that the monoethanolamine derivative is more potent than the free acid, since Auhagen<sup>88</sup> found the 1-glutamic acid derivative eight to ten times as active as equimolecular amounts of para-aminobenzoic acid. At the time of this report the effective level in human beings has not been calculated. Para-aminobenzoic acid, 100 mg. to 200 mg. parenterally is preferably supplemented by 100 mg. doses orally two to three times daily. Both forms of medication are needed to maintain proper blood levels.

No toxic effects have been found in a series of well over 200 cases treated for more than eighteen months with monoethanolamine para-aminobenzoic acid, alone or in combination with para-aminobenzoic acid orally. Kidney and liver function tests have repeatedly given normal values during the course of therapy. Less than 5 per cent of the cases have shown a tendency to mild hypochromic anemia which can be completely controlled by omitting the drug for one to five weeks, or by giving ten to fifteen

units of liver extract parenterally bi-weekly for two to six doses.

The data presented would seem to emphasize the complexity of the bodily mechanism of melanin formation. A review of the literature for the past fifteen years disclosed the relative inefficacy of any agent, whether intrinsic or extrinsic, in the therapeutics of pathological pigmentation. Previous data of the author<sup>71,73</sup> indicated an association of endocrine imbalance with vitamin deficiency in faulty pigmentation processes. The effect of estrogenic hormones on pigmentation has been demonstrated by Bloch and Schrafl<sup>89</sup> and more recently by Gerstl.<sup>90</sup> The author<sup>71,73</sup> has shown B-vitamins to be effective in human achromotrichia. Rothman's investigations,<sup>80</sup> the results of which he had foreseen years earlier,<sup>81</sup> demonstrated that the vitamin para-aminobenzoic acid is an essential constituent of the skin, and is responsible for the tan darkening from actinic radiation. Para-aminobenzoic acid, in the opinion of the author, is considered as only a single link in an entire chain of factors involved in melanin formation. Its action may be by way of enzymic, and possibly intestinal processes, which tend to affect synthesis and absorption of vitamins. In the light of recent investigations,<sup>91</sup> it may be the "undetermined stimulant," suggested by Bloch,<sup>92</sup> for the dopa reaction. Further studies will undoubtedly reveal the specific action of para-aminobenzoic acid.

Although remarkable improvement has been observed in the 48 cases of vitiligo discussed in this communication, no claim is made that the therapy employed will give cures in all cases, nor that the vitamin, para-aminobenzoic acid, is a specific for this disease. However, the results obtained from the combined vitamin-hormone therapy have been most encouraging, and deserve extensive trial by other physicians. It should be emphasized once again, however, that the therapeutic course must include restoration of endocrine balance, eradication of vitamin deficiencies, removal of foci of infection, and administration of the specific vitamin para-aminobenzoic acid orally, and its monoethanolamine derivative parenterally.

#### CONCLUSIONS

1. The literature on the therapy of vitiligo for the past fifteen years has been summarized.
2. Dietary and hormone deficiencies were constant findings in all vitiligo patients examined.

3. A new approach to the therapy of vitiligo, involving combined vitamin and hormone treatment, is described.

4. Favorable results were obtained in 48 cases, 5 of which have been discussed briefly.

5. Para-aminobenzoic acid by itself, and in the form of its monoethanolamine derivative, was the specific agent used.

6. Para-aminobenzoic acid is considered to be only one of the many factors influencing melanin formation.

7. No toxic effects were encountered from the administration of para-aminobenzoic acid or its derivatives.

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371 Commonwealth Avenue

### National Conference on Medical Service.

Post-war distribution of medical care will be the theme for the nineteenth annual session of the National Conference on Medical Service to be held in Chicago, February 11, 1945. Medical legislation, physical fitness program, rehabilitation of veterans, latest word from the Washington front, relationship between labor and farm groups and medicine are among the topics to be discussed by nationally known speakers who will appear on the program. Also listed on the program will be an open discussion on prepayment medical plans, the principal ad-

vantages and defects of both service and indemnity types of insurance being presented. Congressman Arthur L. Miller of Nebraska, author of the Miller Bill to unify certain health services, is to be among the speakers.

All members of the American Medical Association are invited to attend. Detailed programs of the conference are now ready and may be obtained by writing Cleon A. Nafe, M.D., secretary, National Conference on Medical Service, 822 Hume Mansur Building, Indianapolis 4, Indiana.

## SOME OBSERVATIONS ON ACUTE PARALYSIS\*

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and  
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In an analysis of 3,227 patients, slightly less than 1 per cent have suffered paralysis of an acute nature not associated with penetrating wounds. These afflictions have been of interest in view of the variety of etiological agents, known and un-

known (Table 1), because of the unusual location of some of the lesions. pleural effusion, empyema, and pericarditis, while involvement of the meninges is a rare complication. Cerebral thrombosis and embolism are almost unknown entities following pneumococcal invasion. However, in one soldier this possibility was apparent. He was admitted to St. George's Hospital in London with a temperature of 105 degrees and acute delirium, associated with right upper lobe consolidation. The sputum was positive for pneumococcus type 10, as was the blood culture. Spinal fluid was normal. At the end of the third day of delirium, after adequate sulfadiazine therapy, right hemiplegia was apparent. There was no clinical evidence of endocarditis, but the endocardium might have been involved. The right leg rapidly improved, while the weakness of the right upper extremity and lower right facial paralysis persisted. At the end of three weeks an intention tremor developed in the right upper extremity, persisting to a marked degree at the end of six months' observation, while the paralysis showed marked improvement. This embolic lesion involved the lenticulo-thalamic branch of the middle cerebral artery which supplies the thalamus and genu of the internal capsule (Table 2).

TABLE 1

## ETIOLOGICAL AGENTS IN ACUTE PARALYSIS

## A. CENTRAL LESIONS

1. Diphtheria
2. Meningococcus
3. Pneumococcus
4. Virus (?)
5. Malaria
6. Blast

## B. PERIPHERAL LESIONS

1. Virus (?)
2. Unknown
3. Pressure

known (Table 1), because of the unusual location of some of the lesions.

## A. CENTRAL LESIONS

Following attacks of acute diphtheria, paralysis has occurred in approximately 50 per cent of the patients and is said to occur in a much greater incidence in those who are inadequately treated.<sup>1</sup> We have had one such paralysis occurring in a twenty year old soldier ten days after 75,000 units of anti-toxin had been administered. The paralysis involved the ninth cranial nerves, manifested by impaired phonation and regurgitation of fluids through the nose. Partial paralysis occurred in the third week involving all extremities. Disturbances of the sensory system, including heat, cold and vibratory reception were not elicited. The deep reflexes were absent in all extremities. There was no reaction of degeneration four months after the onset of the paralysis, but the deep reflexes remained diminished and the gait slightly ataxic.

After lobar pneumonia the usual complications are

TABLE 2

## BRANCHES OF THE MIDDLE CEREBRAL ARTERY TO THE THALAMUS, CAUDATE AND LENTICULAR NUCLEI

## A. MEDIAL STRIATE GROUP

1. Ascending Anterior Portion Caudate N.
2. Anterior Limb of Internal Capsule.
3. Anterior Portion Lenticular Nucleus.
4. Anterior End of Thalamus.

## B. LATERAL STRIATE GROUP

1. Lenticulothalamic
  - (a) Globus Pallidus.
  - (b) Adjacent Part of Internal Capsule.
  - (c) Best Part of Genu.
  - (d) Large Part of Thalamus.
2. Lenticulocaudate
  - (a) External Capsule.
  - (b) Putamen.
  - (c) Superior Radiation of Internal Capsule.

\*From the Medical Service of Ashford General Hospital, with the Technical Assistance of Pfc. Raymond H. Wagner.

Lecture delivered at the Fall Opening Meeting of Richmond Academy of Medicine, Richmond, Va., September 28, 1943.

These thalamic and striatal lesions are not well understood, but a few facts are clear. It was ob-

served by Wilson<sup>2</sup> and others that, if one who has athetosis develops a hemiplegia, these involuntary movements disappear from the paralyzed limbs. If athetosis develops as the result of a capsular lesion which has produced a hemiplegia, these involuntary movements do not appear until the paralysis has largely subsided. Levin<sup>3</sup> has shown that these pyramidal and parapyramidal fibers are closely associated anatomically. For this reason both groups of fibers are expected to be involved by a lesion which produces a hemiplegia. The experiments of Dusser de Barenne, Garol and McCulloch<sup>4</sup> and Bucy<sup>5</sup> have clarified the *modus operandi* of such abnormal neurophysiology. They clearly demonstrated a series of vertical strips of cortex, the excitation of which is capable of suppressing the electrical activity of the precentral areas four and six from which the parapyramidal systems arise. These observers further demonstrated that the inhibitory influence which originates in the suppressor strips is not transmitted by any direct intracortical connection, but rather passes downward to the caudate nucleus to the thalamus and back to the precentral cortex. Actual anatomical demonstration of this circuit is not completely supported, but it is strongly suspected to be a fact. For this reason, when the suppressor mechanism of this pathway is interrupted, hyperactivity of the precentral cortex occurs. When this pathway is interrupted by a lesion in the basal ganglia, or in the ventrolateral nucleus of the thalamus, as shown by Schuster,<sup>6</sup> this hyperactivity of the parapyramidal system is released, and involuntary movements of the skeletal musculature appear. The lesion in this patient was thought to be situated in the ventrolateral nucleus of the thalamus or in the basal ganglia.

Meningococcus sepsis with bacteremia in epidemic form is not an unusual experience. When cerebral metastasis occurs it produces an uncommon and often confusing picture. Since the advent of sulfonamide therapy, few have been such complications. With one soldier the signs of the disease were characteristic, and the spinal tap yielded purulent fluid with 720 cells, mostly polymorphonuclears, and the culture was positive for meningococcus. There was no evidence of spinal block nor of focal brain abscess. Left hemiplegia appeared on the fifth day and has persisted more marked in the left upper extremity and left face, indicating that the right

sylvian artery was involved in the metastatic process.

Various cranial nerve paralyses have been associated with so-called virus infection of the nerve or its nucleus. Those lesions which have interested us in particular have been associated with herpes zoster or atypical pneumonia. One soldier had a transient disturbance in the conjugate movement of his eyes following an acute upper respiratory infection which apparently was due to supranuclear involvement of the oculomotor pathways. Those lesions which produce interference with the conjugate gaze may be situated in the precentral region of the cortex or along the tracts conducting these impulses, or in the brain stem centers.

Three soldiers had involvement of the Gasserian ganglion associated with Bell's phenomenon. The general characteristics of their complaints included burning or itching of the lips, the involved area of the face and mucous membrane of the mouth. There was marked facial pain in one patient, whereas in two soldiers there was mere tingling associated with hyperesthesia of the involved face, nose and lips. With the temporary loss of taste of the anterior two-thirds of the tongue there were associated herpetic lesions on the tip of the tongue. The taste fibers to the anterior two-thirds of the tongue are derived from the chorda tympani branch of the facial nerve. Hence, temporary loss of taste is due to pressure upon these fibers by the degenerating lingual filaments of the trigeminal. Degeneration of the nerve central to the ganglion may interfere with normal gait and station, and this disturbance was noted in two of these patients. Accompanying these sensory changes there was weakness of the muscles of mastication.

Acute involvement of the seventh, ninth, tenth and eleventh nerves, associated with so-called virus infections, has been observed. One soldier had an acute onset of high fever with delirium, associated with dysphonia, regurgitation of fluids, inability to swallow, difficulty in breathing, and incomplete paraplegia. The spinal fluid was under a pressure of 200 mm. of water with 150 cells, mostly lymphocytes. A diagnosis of polioencephalitis was entertained. However, this soldier made a complete recovery, and we rather prefer to classify this disease as multiple neuritis involving several cranial nerves. Interestingly enough, one patient with virus encephalitis subsequently developed burning epigastric pain



which persistently occurred between meals, associated with tenderness in the right upper quadrant. A study of his gastro-intestinal tract revealed unequivocal evidence of a duodenal ulcer. This calls to mind the observations of Cushing<sup>7</sup> who suggested that disturbances in the hypothalamus, conveyed along the vagus nerve, might be responsible for changes in the gastric mucosa, leading to the development of ulcer. Subsequently, Fulton<sup>8</sup> noted ulcerations of the stomach and proximal duodenum with hemorrhage following lesions of the interbrain.

Another soldier was hospitalized in Tunisia for measles. Ten days after the onset of his sore throat he complained of severe occipital headache, nausea and vomiting. The following morning phonation was impaired, fluids regurgitated, the inside of his mouth felt numb, and bilateral herpes zoster appeared on the lower lip. He was unable to move his arms and legs without great effort. There was no evidence of vagus disturbance. Spinal fluid examination revealed cell counts of ten and twelve lymphocytes on two occasions with the total protein elevated to sixty and eighty milligrams. Cultures were negative. Two complete blood counts were normal. Recovery of all paralyses was slow, for after two months diplopia was present on looking to the right and downward. Involvement of all branches of both facial nerves and poor phonation, persisted, as did impairment of gait and left upper ataxia. After four months there was marked residual involvement of both facial nerves without any apparent ataxia. Impaired phonation and slight weakness of the masseters persisted. The deep reflexes remained hyperactive bilaterally, but no pathological reflexes were found at any time. At the end of seven months the bilateral Bell's phenomenon was less marked (Fig. 1). There was slight weakness of both masseters, right palatal weakness, and impaired phonation; the deep reflexes continued to be hyperactive. The illness of these two patients with multiple cranial nerve lesions and incomplete paraplegia was probably due to virus invasion of the brain.

There has been an opportunity to study malarial fever in Army Hospitals. Patients returning from the South Pacific area have had their blood streams invaded by primary tertian malaria. The patients having mixed types of malarial fever are those with long terms of service in the Army, especially those who have had service in the tropics prior to the

present war. Following a heavy parasitic invasion certain brain capillaries may become plugged with masses of corpuscles bearing parasites, accompanied by free parasites. This was demonstrated by Durck<sup>9</sup> during the last war. Focal necrosis may involve the blood vessels of the meninges and subcortical areas. One patient who returned to us following severe malignant malaria complained of left-sided weakness during the course of the first week of his hospitalization at which time the weakness of the left arm was pronounced. No pathological reflexes were observed. After four months there was no weakness of the leg, but slight weakness of the left arm persisted without any reflex abnormality. Malarial parasites have not been observed in his peripheral blood since June, 1943. Some malarial deaths are



Fig. 1.—Residual bilateral Bell's phenomenon was evident after seven months' observation.

undoubtedly due to the obstruction produced by these parasitic laden corpuscles. It seems reasonable to suppose that transient paralysis may be an aftermath of cerebral malaria, but from our observations one need not anticipate a great degree of permanence. Furthermore, there is reason to believe that the incidence of cerebral malaria and its complications have been reduced by our suppressive therapy.

Immersion-blast and open air blast injuries have accounted for many casualties in the present war. Familiar are the gastro-intestinal and pulmonary hemorrhages which have been repeatedly observed following immersion-blast injuries.<sup>10</sup> Soldiers subjected to high explosive blasts within the critical range have been killed instantly, or they have suffered disability caused by the concussion force of the exploding shell when the vibration in the cranial vault exceeded 28/sec/sec. The blast may cause

multiple cerebral petechiae, or it may produce gross hemorrhage in the cranium. If such hemorrhage involves the internal capsule, paralysis will ensue. Friedell and Auckland<sup>10</sup> did not note hemorrhages into the brain in their experimental animals. They felt that a blast wave sufficiently forceful to produce intracranial damage would certainly cause fatal lesions in the body cavities of their animals. However, Abbott, Due and Nosik<sup>11</sup> have called attention to a group of patients exposed to blast injury who have had loss of consciousness, memory loss, persistent headache, and transient hemiparesis. Accordingly, they have advanced the idea that these symptoms are characteristic of a subdural hematoma or effusion. We have followed one soldier who was picked up unconscious following a bombing raid in North Africa. The following morning complete right hemiplegia was apparent, associated with motor aphasia. Spinal fluid was under slightly increased pressure. Otherwise, there were no fluid abnormalities. A large subdural hematoma, involving the left motor cortex, might explain this syndrome. Victims of blast without focalization of the lesion often present a similar pattern. There is loss of consciousness for several hours, usually followed by loss of ideation, persistent headaches, irritability, and minimal neurologic changes. This syndrome offers a marked contrast to the so-called minor blast injuries with superimposed psychoneurosis, for these individuals build a multitude of somatic complaints about themselves.

#### B. PERIPHERAL LESIONS

Peripheral involvement of the facial nerve has been observed in six patients, associated with herpes zoster. In paralysis resulting from injury to the trunk of this nerve all the muscles on the affected side of the face were completely paralyzed. These soldiers were unable to close the affected eye or to frown, and the eyebrow drooped. Unlike the paralysis in supranuclear lesions, the muscles of the affected side take no part in the facial expression of laughing or crying. None of these peripheral lesions completely recovered. Restoration of taste occurred early but there was slight residual facial muscle atrophy. After six months two soldiers showed persistent involvement of the ophthalmic branch, manifested by incomplete closure of the eye and diminished corneal reflex. One soldier suffered complete

right facial paralysis of the peripheral variety three weeks after sulfadiazine was given in the treatment of an acute specific urethritis. This lesion was not associated with herpes zoster. Recovery was incomplete at the end of six months. Whether or not the sulfonamide therapy had any relation to the facial neuritis was not apparent.

For the prevention of a few diseases certain immunizing substances are employed. Following such injections there is an occasional localized paralysis, and rarely some remote muscle is involved. The deltoid and serratus anterior muscles have been known to be the site of such paralyzes following administration of diphtheria antitoxin or tetanus toxoid. One thirty-one year old soldier, whose foot drop occurred three weeks following the injection of tetanus toxoid, has been followed. When the paralysis appeared the soldier was in active preparation for foreign duty, and he complained of inability to march just prior to leaving. At the port of debarkation right foot drop, with claw-like deformity was noted, associated with slight atrophy of the tibialis anticus muscle, diminished right ankle jerk, and without any sensory change. There was no reaction of degeneration. Six months later tibialis muscle atrophy was marked and there was a positive reaction of degeneration.

We have seen two soldiers with serratus anterior paralysis of unknown origin. In both instances the paralysis involved the right serratus muscle, occurred while the soldier was on active duty, and without apparent cause. In neither instance was there history of trauma or undue effort. Both of these patients had well developed muscles and were slightly obese. Their course of prophylactic injections had preceded the appearance of paralysis by several months, nor could the paralysis be directly related to any infectious process. The serratus anterior muscle is supplied by the long thoracic nerve which is derived from the fifth, sixth and seventh cervical nerves. This muscle is concerned with carrying the scapula forward, and at the same time it acts to elevate the vertebral border of this bone. For this reason it is concerned in the action of pushing (Fig. 2). Its lower digitations, which are the stronger fibers, move the lower angle of the scapula forward, assisting the trapezius muscle in rotating the bone at the sternoclavicular joint, and in this fashion assist in raising the acromion and support-

ing weights upon the shoulder. Furthermore, after the deltoid has raised the arm to a right angle with the trunk, the serratus anterior and the trapezius,



Fig. 2.—Paralysis of the right serratus anterior muscle was apparent after six months of observation.

by rotating the scapula anteriorly, elevate the arm into an almost vertical position.

#### PRESSURE

Paralysis of the spinal accessory nerve is a rare phenomenon in civilian life. When this nerve is injured by external pressure, the innervation of the upper belly of the trapezius muscle is involved and less frequently the function of the sternocleidomastoideus muscle is impaired. The function of the trapezius muscle is to elevate the shoulder and abduct the scapula toward the mid-line (Table 3). When the upper belly of the muscle is paralyzed the involved shoulder does not move in respiration. When the lower portions of the muscle are paralyzed the weight of the involved arm pulls the acromion downward, the inner angle of the scapula is elevated and displaced outward by the levator angularis scapulae, while the lower angle of the scapula is drawn to the mid-line. For this reason the involved shoulder droops and usually the arm cannot be abducted beyond a 90 degree angle. When the entire muscle is paralyzed the glenoid cavity cannot be brought into a forward position to permit the head of the humerus to elevate the arm beyond an angle of 90 degrees unless the scapula is passively held against the chest wall.

Unilateral paralysis of the spinal accessory nerve has been noted in two soldiers, apparently due to carrying a heavily laden pack. There were no objective signs of residual paralysis in one of these soldiers who had just returned from overseas duty.

On examination of the other soldier moderate atrophy of the clavicular portion of the trapezius was found, and elevation of the shoulder could not be maintained under firm pressure. The internal margin of the involved scapula was slightly displaced outward resulting in characteristic broadening of the back and shoulder. Anterior elevation of the arm was readily accomplished, but abduction could not be accomplished beyond ninety degrees, except when the scapula was firmly held against the chest wall. This movement is accomplished by rotation of the scapula forward by means of the action of the serratus anterior muscle which is necessary to complete the act of abduction. Stimulation of the normal trapezius required one-half the current compared with the affected side. Normal contractions were elicited in the serratus anterior,

TABLE 3  
MUSCLES ACTING UPON THE SHOULDER GIRDLE

SIMPLE ELEVATION	UPWARD ROTATION
Trapezius (upper) Lev. Scapulae	Trapezius (upper) Trapezius (lower) Serratus Anterior
FORWARD MOVEMENT	BACKWARD MOVEMENT
Pect. Minor Lev. Scap. Serratus Anterior and Pect. Major	Trapezius (mid.) Rhomboids and Lat. Dorsi

rhomboid and deltoid muscles. These patients who suffered pack paralyses demonstrate the well recognized fact that the eleventh cranial nerve may be injured by external pressure. It becomes superficial when it pierces the sternocleidomastoideus and crosses obliquely across the posterior triangle of the neck to end in the deep surface of the trapezius. That this nerve is joined by branches of the second and third cervical nerves at variable levels, and forms a plexus with the fourth and fifth cervical nerves within the muscle, may account for the fact that relatively few of these paralyses occur.

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### Find Early Physical Fitness Training Shortens Convalescence.

Physical fitness tests given AAF cadets recovering from acute, uncomplicated upper respiratory diseases to determine when it was safe and beneficial for them to participate in physical training programs revealed that they could do so earlier than had been commonly believed and that the participation reduced hospitalization time, Peter V. Karpovich, M.D., Randolph Field, Texas; Lieutenant Colonel Merritt P. Starr, Medical Corps, A. U. S., and Captain Raymond A. Weiss, Air Corps, A. U. S., report in *The Journal of the American Medical Association* for December 2.

The tests, which were given 417 cadets and students convalescing from primary atypical pneumonia, influenza, tonsillitis and other upper respiratory infections, consisted of stepping up and down on a 20 inch box at a cadence and for a period of time which were increased for each of three tests.

It was found that three days after an acute fever of two and a half days' duration a cadet could pass a physical fitness test equivalent to walking up to a height of 20 feet and down again in thirty seconds (approximately to the third floor of an average building). One and a half additional days after fever, the convalescent cadet could pass a physical fitness test equivalent to climbing 200 feet and coming down in five minutes (approximately to the twenty-first floor). After three more days he could pass the test for discharge to full military duty.

Those passing the first test took mild calisthenics in the ward and those passing the second and third

tests participated in outdoor physical training.

The importance of physical training is emphasized by the finding that men with a high degree of physical fitness retained a high level throughout their illness, the investigators say.

### Red Cross Denies Rumors That Plasma Is Sold.

A categorical denial of rumors that Red Cross blood plasma is being sold to the armed forces has been issued by Red Cross Chairman Basil O'Connor. The only end which such a rumor might achieve, it was pointed out, would be to deprive our fighting men of essential quantities of this life-saving substance.

"It has been called to our attention that rumors alleging Red Cross blood plasma is being sold to soldiers and sailors are being circulated throughout the United States," Mr. O'Connor said. "These rumors are vicious lies and apparently circulated by persons who wish to deprive our fighting men of life-saving plasma.

"The blood which more than 100,000 patriotic Americans donate each week to the Red Cross is turned over to the Army and Navy and processed by them into blood plasma, or flown as refrigerated whole blood to Europe and the Pacific.

"Full possession and control of the blood passes into the hands of the Army and Navy when the Red Cross ships it from its donor centers to processing laboratories. The Army and Navy, as is well known, administer this blood or plasma to wounded soldiers and sailors without any charge."

## PALLIATIVE TREATMENT OF CARCINOMA OF ESOPHAGUS: REPORT OF A CASE

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Richmond, Virginia.

Carcinoma of the esophagus continues to present a therapeutic problem in spite of advances that have been made in its surgical treatment. Because of failure to recognize the disease at an early stage, the majority of patients who are operated on for malignant tumor of the esophagus prove to have a lesion far too extensive for excision and nothing is accomplished by exploration. In the few instances in which removal of the growth appears to be successful, the end results are usually disappointing because metastatic tumors not apparent at the time of operation have developed. The high degree of malignancy of carcinoma of the esophagus, with the prospect of almost inevitable recurrence of the growth after operation, presents a discouraging outlook even in the most favorable cases. Employment of radium and high voltage roentgen ray therapy has seldom produced curative or palliative results. Gastrostomy usually proves to be a nuisance to the patient and to the surgeon and rarely increases length of life or comfort. Mechanical dilation of malignant strictures of the esophagus provides a longer period of comfortable survival than any other treatment thus far suggested.

### REPORT OF A CASE

A Negro, aged 74, entered St. Philip Hospital December 10, 1942, with almost complete esophageal obstruction. He had begun to have difficulty in swallowing solid food nine months previously, and obstruction had gradually become more pronounced until, at the time of admission, he could swallow liquids only. Three weeks prior to admission hoarseness developed and the patient had a frequent, brassy cough. Significant physical findings were moderate emaciation, paralysis of the right vocal cord and numerous firm, fixed, enlarged lymph nodes in the right cervical region. Roentgenoscopic examination revealed an extensive filling defect, characteristic of carcinomatous infiltration, in the upper third of the esophagus. The pathologic report on tissue removed from the lesion was squamous cell carcinoma grade 3.

When sounds were passed over a previously swallowed silk thread, an obstruction, apparently about 2 inches (5 cm.) in length, was located 8 inches

(20 cm.) from the incisor teeth. The area of stenosis was dilated with ease to the size of a 45 French sound, after which the patient was able to swallow all types of food without difficulty. He was dismissed from the hospital December 16.

During the past year eight subsequent dilations have been required to maintain the lumen of the esophagus. At present, one year after the beginning of treatment, the patient is able to eat any variety



Photograph of patient taken one year after beginning of palliative treatment of carcinoma of the esophagus by dilation.

of food for a month after the passage of dilating sounds, and he continues his work as a janitor in an apartment hotel sixteen blocks from the hospital. He rides a bicycle from his work to the hospital, receives the dilation and rides back to his place of employment. Hospitalization has not been necessary since the date of his first treatment, and he has not lost any time from work (figure).

## SUMMARY

A patient, 74 years of age, suffering from carcinoma of the esophagus, had noted dysphagia for nine months prior to his first examination, at which time obstruction of the esophagus was pronounced and metastasis to the cervical lymph nodes had developed, with involvement of the right recurrent laryngeal nerve and paralysis of the right vocal

cord. Repeated dilation of the malignant stricture has resulted in marked palliative relief and has enabled the patient to continue at his work for a year. The general condition of the patient, one year after the beginning of treatment, is more satisfactory than it was when he was first examined.

*Medical College of Virginia.*

## New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, under usual library rules:

- Annual report of the Smithsonian Institution. 1943.  
 Appleton—Bacterial infection. 2nd. ed.  
 Arthus—Maurice Arthus' philosophy of scientific investigation.  
 Belding, D. L.—Textbook of clinical parasitology.  
 Bisham, W. N.—Malaria: Its diagnosis, treatment and prophylaxis.  
 Brill, A. A.—Freud's contribution to psychiatry.  
 Collier, Howard E.—Outlines of industrial medical practice.  
 Dewey, J., & Tufts, J. H.—Ethics.  
 Dodd, W. F.—Administration of workmen's compensation.  
 Eagleton's Index—Abstracts of progress in intracranial lesions related to aural and nasal conditions.  
 Eliason—First aid in emergencies.  
 Fry, S., McLeod & Parfill—Supplement to the dental treatment of maxillo-facial injuries.  
 Gafafer, William, ed.—Manual of industrial hygiene and medical service in war injuries.  
 Galdston, Iago—Maternal deaths—ways to prevention.  
 Girard—Home treatment of spastic paralysis.  
 Goodman & Gilman—The pharmacological basis of therapeutical basis of therapeutics.  
 Grant—An atlas of anatomy.  
 Grant—Method of anatomy. 3rd. ed. 1944.  
 Gunther, C. E. M.—Practical malaria control, a handbook for field workers.  
 Harrison, Gene—Professional adjustments. I & II. The Harvey Lectures 1943-1944.  
 Hertzler, A. E.—The grounds of an old surgeon's faith.  
 Higgins, C. C.—Renal lithiasis.  
 Hoff, P. M.—A bibliography of aviation medicine supplement. 1944.  
 Hurlock—Modern ways with babies.  
 Hutton, J. H.—Endocrinology, a brief review for physicians.  
 Jaeger, Edmund C.—A source book of biological names and terms.

- Johnson, Charles S.—To stem this tide, a survey of racial tension areas in the United States. 1943.  
 Jokl, Ernst—Medical aspects of aviation. 1943.  
 Jones, Harold E.—Development in adolescence.  
 Lewis—Diseases of the heart.  
 Maternity Center Association—Maternity handbook.  
 Munoz—The microscope and its use.  
 Nauss, R. W.—Medical parasitology and zoology.  
 Pullen, R. L. ed.—Medical diagnosis, applied physical diagnosis.  
 Rich—The pathogenesis of tuberculosis.  
 Rose, M. S.—Rose's foundations of nutrition. 4th ed. rev. 1944.  
 Saphir, Otto—An outline of tropical medicine.  
 Sayers, G.—More manpower through reduction of absences.  
 Sigler—The electrocardiogram: Its interpretation and clinical application.  
 Simmons, J. S.—Global epidemiology, a geography of disease and sanitation. 1944.  
 Simmons and Gentzkow—Laboratory methods of U. S. Army. 1944.  
 Solomon, H. C. ed.—Manual of military neuropsychiatry.  
 Soper, F.—Organization of permanent nation-wide Anti-Aedes aegypti measures in Brazil.  
 Spiegel-Sommer—Neurology of eye, ear, nose and throat. 1944.  
 Spock & Huschka—Psychological aspects of pediatric practice.  
 Turner & McHose—Effective living.  
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## ABSCESS OF THE SPLEEN WITH DIAPHRAMATIC PERFORATION—CASE REPORT

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### INTRODUCTION

Splenic abscess is of infrequent occurrence in surgical practice, but more frequent to the pathologist, so, in an effort to reverse this, our case is reported. The diagnosis is seldom made pre-operatively and, if it is made, a secondary possibility is usually mentioned.

In the majority of cases reported, the sequence of events is very clear cut and we believe the diagnosis is not thought of; consequently, it is missed or treatment delayed. The subject of splenic abscess may be divided into traumatic abscess of the spleen and abscesses due to systemic infection. Inlow,<sup>1</sup> in 1927, in a review of the literature, revealed that traumatic abscesses of the spleen constituted 15 per cent of splenic abscesses. The type of injury to the splenic area produced contusion, or rupture of the spleen with secondary infection of the hematoma or contused tissue lead to abscess. The treatment was surgical and the mortality was 38 per cent on those operated upon. Eighty-five per cent of the cases reported are due to infection arising from all parts of the body. These infections are local or general and

lowed puerperal sepsis, another a carbuncle, and the cause of the third was not known. Fauntleroy<sup>7</sup> reported a case following appendicitis in which the clinical course was almost identical with our case.

Many infections have produced abscesses of the

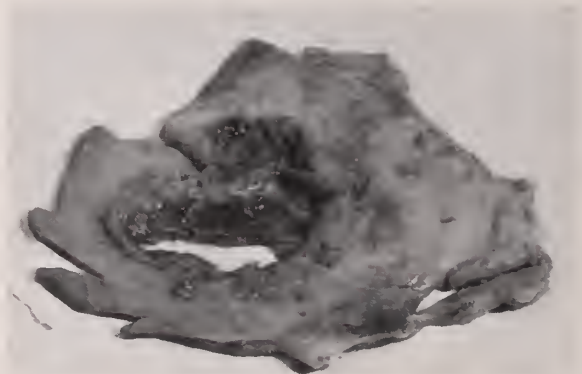


Fig. 2.—Left diaphragm with perforation from rupture of splenic abscess.

spleen, such as typhoid fever, malaria, pneumonia, phlebitis, and appendicitis. Septicemia occurred in twenty-eight of thirty cases, including two with typhoid fever as reported by Walker,<sup>4</sup> consequently, septicemia with or without positive blood culture is a very important diagnostic point.

Elting<sup>5</sup> reported that, with the exception of the gonococcus, most other pyogenic bacteria have caused splenic abscesses. A small percentage of these abscesses are due to contiguous pathological processes such as carcinoma of the stomach or colon, ruptured gastric ulcer, perisplenic abscess, or accident, as in kidney operations.

The usual sequence of events is the initial focus of infection with septicemia, a varying latent period, then the splenic embolism or infarct with associated pain, with sudden onset in the left hypochondrium. The pain may or may not radiate to the left shoulder or the costo-vertebral angle, but it is made worse on coughing and forced expiration. The septic temperature, sweats, chills and leucocytosis complete the picture. In our case the spleen was not palpa-

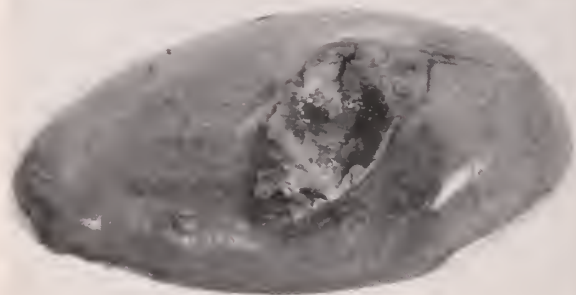


Fig. 1.—Enlarged spleen showing abscess with rupture.

are metastatic. Cutler<sup>2</sup> reported a case from bilateral otitis media. Eliason's<sup>3</sup> case followed a peritonsillar abscess. Walker's<sup>4</sup> case followed mastoid infection with extra dural abscess. Billings<sup>6</sup> reported three cases with recovery following operations; one fol-

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ble nor was there tenderness. The degree of tenderness would be influenced by the location of the abscess. An upper pole abscess is so protected by the rib cage that tenderness can be entirely absent. Walker<sup>4</sup> states that out of thirty cases, twenty-two were multiple abscesses, and only eight were single. Multiple splenic abscesses of the upper third that have not coalesced will not affect the diaphragmatic excursion as seen by roentgen examination. Lower half abscesses are apt to give an abdominal picture due to peritoneal irritation and displacement of abdominal organs if the process is large enough. In the differential diagnosis the kidneys and colon can be excluded by appropriate roentgen studies. Abscesses involving the center of the spleen can give a very obscure picture due to lack of tenderness or displacement as in the case presented.

#### CASE REPORT

Patient, 47 year old white male, admitted to the Medical Service complaining of mild attacks of abdominal pain and constipation of three months' duration, with passage of pencil type stools with no blood and of normal color. The pain had increased in severity three days before admission and had become more frequent and intermittent in character, with a noticeable increase in the size of his lower abdomen. He had never consulted a physician as to his complaints before the day of admission to the hospital. There was loss in appetite several days before admission but no weight loss in the past few years. There had been no vomiting during his illness. Other history was non-contributory.

On admission his temperature, pulse and respirations were normal and his weight was 147 pounds. Positive physical findings revealed a moderately distended, tympanitic lower abdomen below the umbilicus with audible peristalsis but no palpable mass either abdominally or on rectal examination. The remainder of the examination was essentially negative except for audible extra ventricular contractions. His systolic pressure was 102 and diastolic 64.

Laboratory examination on admission revealed a normal urinalysis; R.B.C. 4,600,000; W.B.C. 11,150; Polys. 78 per cent, and Lymphs 22 per cent; sedimentation index 19 mm. in 60 minutes; blood sugar 105, NPN 32.

The patient did not appear to be in too much discomfort, although he appeared to have and complained of considerable abdominal pain during his

intermittent episodes. The next morning after admission a barium enema was reported as showing a deformity of the head of the cecum apparently from some extrinsic pressure.

Twenty-four hours after admission his temperature was 100.2°, pulse 96, W.B.C. 12,250, with 83 per cent polys. There was more abdominal distention in the lower abdomen. Surgical consultation was requested and the patient was accepted to surgery with a diagnosis of acute intestinal obstruction, incomplete, probably from extrinsic inflammatory mass from x-ray interpretation.

Following pre-operative intravenous fluids the patient was explored through a lower right paramedian incision under spinal anesthesia, using 17 mgms. pontocaine.

In opening the peritoneal cavity there were visible loops of distended small intestines proximal to the distal ileum that appeared bounded in an inflammatory mass which, when evacuated, revealed thick purulent material with a fetid *B. coli* odor. After evacuation of as much pus as possible, the extrinsic pressure on the distal ileum seemed to be relieved. The exact origin of the mass could not be determined but was presumably from a large appendiceal abscess; however, the appendix was not seen or disturbed. Six grams of sulfanilamide powder was introduced into the peritoneal cavity and, because of the extensiveness of the abscess and inability to remove all pus, the wound was drained with Penrose drains through the initial incision and lateral stab wounds in the right and left pelvic regions.

The patient was given stimulants and 500 cc. plasma during the operative procedure. A Levine tube was passed into the stomach and connected to a Wangenstein suction on return to bed. The patient had a very stormy post-operative course but improved after the third post-operative day following oxygen and intravenous chemotherapy (sodium sulfadiazine). The gastric suction was discontinued after the fourth post-operative day and the patient was able to take fluids by mouth, but additional fluids were given by vein (plasma, blood and glucose) to maintain fluid balance. His temperature was normal on the fifth post-operative day and his condition seemed improved. Drainage from the wound had been profuse but was decreasing in amount, so that one drain was removed on the fifth post-operative day and the other two shortened.

The temperature remained normal until the tenth post-operative day when it suddenly rose to 102°. At this time the patient complained of pain in the right upper quadrant and was quite tender but no detectable mass. A portable film of the abdomen showed slight elevation of the right diaphragm with no fluid level. Forty-eight hours later the temperature was elevated in the evenings and at this time a tender mass was palpable in the right upper and lateral quadrant.

Using local infiltration of procaine hydrochloride 1 per cent, the lower five intercostal nerves were blocked and the subhepatic abscess was drained through a high right iliac incision. A moderate amount of thick fetid material was evacuated and the wound was closed with drainage after introducing 5 gms. sulfanilamide.

On the second day following this operation his temperature was normal and remained normal until he developed pneumonia in the right base, sixteen (16) days following his second operation. He recovered from the pneumonia in three weeks and all wounds had healed or were granulating. He was convalescing and walking about but complained of occasional epigastric discomfort with sensation of gas on his stomach which was relieved by passage of flatus. His temperature, pulse and respirations were normal but he continued to complain of occasional abdominal discomfort. Gastro-intestinal and colon study with x-rays revealed no abnormalities.

On the ninety-first day following first operation he complained of pain in his left chest for the first time. This pain was not severe and was not aggravated by respirations. His temperature rose to 101° and was remittent in type with intervals of normal temperature for twenty-four to forty-eight hours. Physical examination and x-ray studies of the chest, diaphragm and abdomen revealed nothing to account for his fever. Several days after temperature was elevated he started having frequent chills with temperature spiking to 103° to 104° and returning to normal after a few hours. Laboratory studies revealed only elevated white count and corresponding elevation in polys. Frequent blood cultures taken at different times were all negative. X-rays of the chest and diaphragm were frequently checked for the possibility of diaphragmatic abscess. Intravenous chemotherapy and multiple small blood transfusions did not improve the patient.

During intervals between chills patient felt very well and had a fair appetite.

Medical consultations and additional surgical advice suspected patient of having liver abscess with the suggestion of exploration and aspiration of liver if patient did not improve after one week of observation.

Ten days following episode of chills and remittent fever, the patient was prepared for operation with intravenous fluids including blood transfusion. Under gas, oxygen and ether anesthesia, the patient was explored through a upper right paramedian incision. The liver was moderately enlarged and of normal color, with no palpable evidence of abscess formation. The gall-bladder was normal and there were only a few adhesions encountered in the cecal region. The intestines appeared and felt normal throughout. Both domes of the diaphragm were free and the spleen and kidneys were not enlarged and felt normal. After exploring the organs and no accountable cause found for the chills and fever the liver was aspirated in three areas with no pus being obtained.

The patient withstood the operative procedure well and progress was satisfactory post-operatively except for continued chills and fever. Four days following operation patient was started on Penicillin therapy; 30,000 units were given intramuscularly every three hours until one million and five hundred thousand units were given without any beneficial results, with chills and fever occurring as before. The last chest x-ray was taken one week after his last operation and was normal. All blood cultures continued to be negative.

Patient seemed to gradually decline following chills and high temperature, and developed chest signs of pulmonary edema on the fifteenth post-operative day of his third operation and expired thirty-six hours later.

#### PATHOLOGICAL DIAGNOSIS

1. Splenic abscess, solitary, large, involving mid and upper pole of spleen, with ulceration and sloughing of corresponding portion of diaphragm and producing left pyothorax. The appearance suggested recent perforation.

2. Multiple small liver abscesses.

3. Toxic changes in the major organs.

4. Healed appendicitis.

All areas in the liver were pinhead in size and



some areas showed signs of healing and scarring. The fluid in the left chest and the area of perforation through the diaphragm gave the appearance which suggested recent perforation.

Cultures of the abscesses taken at autopsy produced no growth.

#### DISCUSSION

The probable sequence of events in this case are acute suppurative appendicitis with rupture and abscess formation resulting in partial intestinal obstruction from extrinsic pressure; pyelophlebitis with multiple liver abscesses and subhepatic abscess; septic infarction of spleen with abscess of upper pole perforating the left diaphragm, resulting in left pyothorax.

The diagnosis of splenic abscess can be made before rupture if it is thought of and aspiration of the spleen done under direct vision during exploratory laparotomy.

From our experience and a review of the literature the presence of pain in the upper left quadrant (infarction) of short duration and sudden in onset with signs of sepsis (chills, sweats and spiking temperature) following an acute infection is rather characteristic of splenic abscess after urinary and chest pathology is excluded.

The abdominal findings are practically nil before the period of rupture of the abscess through the splenic capsule.

#### SUMMARY AND CONCLUSIONS

1. A 47 year old white male was operated on for acute intestinal obstruction caused by a large extrinsic mass, inflammatory in origin, presumably appendiceal in origin.
2. Fifteen days post-operative he developed a subhepatic abscess which was drained surgically with recovery.
3. Fourteen days following his second operation he developed pneumonia in the right base and recovered.
4. Patient was up and about, but complained of obscure abdominal pain. A check-up of his gastro-intestinal tract with x-rays at this time was normal.
5. On the ninety-third hospital day he had a chill and temperature of 103.6. These chills and temperature elevations were remittent in type and patient felt very well between chills.
6. Multiple blood transfusions, plasma, chemotherapy and penicillin were not beneficial. X-rays of chest and abdomen did not reveal any pathology.
7. No positive blood cultures were obtained. Checked by several laboratories.
8. Exploratory laparotomy for liver abscess revealed no pathology to account for chills and fever.
9. Icterus index was normal until forty-eight hours before expiration when it rose to 150.
10. This case presented the symptom of upper left quadrant pain, which is usually present in splenic abscess but a clinical diagnosis of splenic abscess could not be ascertained.
11. Patient expired on the 120th post-operative day.

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# TREATMENT OF PERIPHERAL VASCULAR DISEASE WITH PADUTIN†— (DEPROTEINATED PANCREATIC TISSUE EXTRACT INSULIN-FREE)

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Frey and Kraut<sup>1</sup> in 1926 stimulated workers in the field of peripheral vascular disease to use a pancreatic tissue extract in the treatment of these disorders. It has been stated that this preparation is a vascular hormone derived from the pancreas, but differing fundamentally from insulin. It is a complex molecular structure and its chemical constitution is not definitely known. In animal experiments the drug has caused lowering of blood pressure and increase in the skin temperature of the extremities.

Several American investigators, Fisher *et al.*,<sup>2</sup> Fatherree and Hurst,<sup>3</sup> and Gorham and Climenko,<sup>4</sup> have reported favorably on the effects of pancreatic tissue extract in relieving intermittent claudication, thus advocating its use in the treatment of various peripheral vascular disorders. Klein *et al.*,<sup>5</sup> have not been as keen in their appreciation of this vascular hormone. They found no improvement in skin temperature or immediate claudication time and considered that after six to eighteen months of treatment there was no effect on vascular anatomic or tissue anatomic status, on vascular reserve or on functional classification.

In order to evaluate the studies by these various authorities, we decided to approach the problem by using two objective tests, the oscillometer readings and histamine cutaneous reactions. These tests were chosen because, in our experience with clinic patients, their subjective reactions have not been uniform and claudication experiments could not be truly evaluated, as so many of these individuals had other infirmities preventing them from walking at a uniform pace. Skin temperature studies could never be satisfactorily controlled, even in a control room. It was thought that, if we could eliminate the human equation and use these objective tests, a better concept could be obtained about the efficacy of the drug.

## METHOD OF STUDY

The fifteen cases under observation were given

From the Department of Medicine, Medical College of Virginia.

†Padutin niphanoid was supplied by the Department of Medical Research, Winthrop Chemical Company, New York.

complete medical and peripheral vascular examinations. Before determining oscillometer readings and histamine cutaneous reactions, each patient was allowed to rest in a recumbent position for at least one-half hour. Oscillometer readings were obtained with a Collins' sphygmo-oscillometer. Normal readings at each ankle were considered between two and four units. These readings were repeated at frequent intervals, following eight to seventy injections of padutin intramuscularly. Histamine cutaneous reactions were obtained by pricking a drop of histamine phosphate, 1-1000, ten times at each ankle. This test was considered normal if a noticeable flare or wheal appeared within five minutes. The flare was difficult to interpret in negro patients and for these cases the wheal was more important. This test was also repeated frequently, following eight to seventy injections of padutin intramuscularly. The drug was injected in ten unit doses. Most of the cases were given two injections weekly, but several took an injection daily for twenty to thirty days.

## COMMENT ON CHARTS I AND II

Although a variation of less than one unit in os-

CHART I  
EFFECT OF PADUTIN ON OSCILLOMETER READINGS

Case	Age	Diag- nosis	No. In- jection	Oscillometer Reading—Ankle			
				Before		After	
				Right	Left	Right	Left
C.K.	1 65	ASO*	23	0	0.25	0.5	0.75
A.M.	2 65	ASO	16	0.25	0.25	0.25	0.75
T.B.	3 55	ASO	14	0.75	0.25	0.75	0
E.K.	4 51	ASO	33	1.0	1.0	1.5	1.5
F.N.	5 58	ASO	20	2.0	1.0	1.75	1.5
H.W.	6 58	ASO	56	1.5	1.5	.75	2.5
F.F.	7 64	ASO	20‡	0.5	0.75	0.25	0.75
J.S.	8 69	ASO	8	0.75	0	0.75	0
A.J.	9 57	ASO	15	1	1	1	1
J.J.	10 68	ASO	20‡	0	0.25	0	0.25
J.W.	11 45	TAO†	60	**	0.25	**	0.25
P.H.	12 70	ASO	15‡	0	0.25	0	0.25
E.S.	13 35	TAO	20	1	2	1	2
H.H.	14 44	TAO	70	0	2.5	0.75	3
G.A.	15 43	TAO	30‡	0	1	0	1

\*ASO—Arteriosclerosis obliterans.

†TAO—Thrombo-angiitis obliterans.

‡Daily.

\*\*Amputated.

cillometer readings is considered within the limits of error, we arbitrarily decided that any higher readings after padutin would be considered as improvement. Therefore, five of the fifteen cases were considered improved, because there were slight increases in oscillometer readings. The histamine cutaneous reactions also showed improvement in five of the

CHART II  
EFFECT OF PADUTIN ON HISTAMINE CUTANEOUS REACTION  
Ankle

Case	Diagnosis	Before		After	
		Right	Left	Right	Left
1	ASO*	5.5	3.5	4	4
2	ASO	4	4	4.5	5
3	ASO	8	8	4.5	5.5
4	ASO	5	3	6	6
5	ASO	4	5	6	3.5
6	ASO	0	0	7	3.5
7	ASO	0	3	0	3.5
8	ASO	0	0	0	0
9	ASO	5	5	5	4.5
10	ASO	0	0	0	0
11	TAO†	**	0	**	0
12	ASO	0	6	0	6
13	TAO	5	5	5	5
14	TAO	6	4	5	4
15	TAO	7	4	7	3.5

\*ASO—Arteriosclerosis obliterans.

†TAO—Thrombo-angiitis obliterans.

\*\*Amputated.

fifteen cases, but only in cases one, six, and fourteen, did the histamine reaction coincide with the oscillometric improvement.

#### DISCUSSION

It would seem from these objective findings that padutin had no great efficacy as a therapeutic agent in thrombo-angiitis obliterans or arteriosclerotic obliterans. We must admit that several of the patients were very enthusiastic as to the value of the injections, insisting that they could walk further with less pain, but in a careful analysis of their claims, and exercising these special cases on a flat walking surface, very little improvement could be seen. Skin temperature studies and claudication

times were obtained on several of these patients who did not have coronary heart disease or disabling arthritis. The data accumulated from these tests still conformed to the findings after histamine cutaneous reactions and oscillometer readings.

In order to be perfectly fair in our evaluation of this drug, it must be stated that these patients were the usual clinic individuals and those chosen for daily injections of padutin over a period of from fifteen to thirty days, were cases with very poor circulation and all other methods of therapy had also failed. It is possible that our present tests for circulatory efficiency are too crude to show slight increases in blood flow and we may not be using large enough quantities of the tissue extract at each injection.

#### CONCLUSION

Oscillometer readings and histamine cutaneous reactions were not appreciably changed in cases of peripheral vascular disease after injections of padutin. Further studies, with larger doses, may be necessary to prove the drug's efficacy.

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## MENINGOCOCCEMIA—A REPORT OF FIVE CASES

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It is now rather generally conceded that the meningococcus first finds lodgment in the upper respiratory tract. In this location, it may produce local symptoms which rarely are associated clinically with such a potentially dangerous organism or it may live as a saprophyte. According to Levinson,<sup>1</sup> from 40 to 70 per cent of the population in affected areas have been found to harbor the meningococcus during epidemics.

A carefully taken history will usually reveal that the patient with meningococemia had experienced symptoms of a coryza a few days before the onset of severe symptoms. Whether or not the preliminary coryza was due to the meningococcus, to some other organism or virus, to some allergen or to any combination of these factors, cannot be stated definitely.

The possibility that some allergen, e.g., orange juice, or the allergic constitution itself, may play the role of accomplice, is suggested by the following case reports. Whatever may be the cause of the preliminary pathology, it is probably through the affected mucous membranes that the invasion of the blood stream occurs.

The five cases reported here in chronological order were all seen within twelve months' time in private practice, and four of the five were treated at home. So far as I can recall, they comprise the only cases of meningococcus infection in my practice which were recognized and treated before meningitis occurred. The probability that such opportunities will continue to occur justifies this report.

1. W. T. Eleven months old. This patient was first seen at the age of eight months for convulsive seizures, severe constipation, and regurgitation of food. Orange juice had caused a skin eruption and had been replaced by ascorbic acid. Physical examination revealed a hemiplegia of the right side. When seen at home on February 23, 1943, the mother said that the baby had had a head cold for four days, with no fever until that day. During the day, the temperature jumped quickly to 104.8 (R) and a few skin lesions appeared. When I saw the child about 6 P. M., the temperature was 102.4 (R), and about thirty pin-head size lesions were found scattered

about in the skin. These consisted of a central petechial dot and a small ring of erythema. The nose was open; the right ear drum was slightly pink. There was a slight mucoid drainage post-nasally, but the pharynx was not red. Physical examination otherwise was essentially negative except for the old hemiplegia.

A throat culture was taken and sent to the Virginia State Laboratory shortly before time for cultures to be planted, and the patient was started on sulfadiazine immediately. No meningococci were found in the throat culture. The baby had no fever the next day and seemed as well as ever. On the third day the medication was stopped. A provisional diagnosis of meningococcal septicemia was made. Following this illness the patient stopped having the convulsive spells and has shown greater improvement than had been anticipated. This improvement had started after the patient had been given fresh cow's milk, prior to this illness. Before trying the fresh milk both evaporated goat's milk and Mullsoy had been substituted for the evaporated cow's milk with poor results. The convulsions seemed to be definitely associated with the regurgitation and constipation as all three stopped with the change in diet.

2. D. P. Three and a half years old. The past history was essentially negative except for cranio tabes as a baby, small testicles, and inability to take orange juice and Oleum Percomorphum.

April 22, 1943. The patient was taken sick on the twenty-first. He had fever, abdominal pain, and pains in his hands and feet. He had vomited twice. Physical examination: temperature 104 (R); eyes and ears normal; slight nasal congestion; pharynx was about normal. The physical examination otherwise was negative except for skin lesions, apparently hemorrhagic in type and of varying sizes, scattered over the trunk and extremities. Slight, if any, stiffness of the neck. Reflexes were normal. Sulfadiazine about one grain per pound of body weight daily and nicotinic acid ten milligrams every four hours were started after blood culture was taken by Dr. Richard C. Neale.

April 23, 1943. No more vomiting. The temperature fell during the night.

April 24, 1943. No more fever. The patient feels

1. Levinson, A., Brenemann Practice of Pediatrics: IV:28; page 46.

well. Physical examination: no abnormalities found except the spots in the skin which were fading. Blood culture was reported positive for meningococcus. The blood counts were as follows: RBC 3,740,000; WBC 13,500; hemoglobin 78 per cent; juvenile 2 per cent; stab 15 per cent; segmented 62 per cent; lymphocytes 21 per cent. Description of the smear: The red blood cells appeared normal in size, shape, and hemoglobin content. No immature red cells were seen. The white cells showed moderate toxic degeneration. Cultures made from the throat showed a small number of non-hemolytic streptococci only.

3. C. T. One year old. The patient was first seen at six months of age for otitis media with fever of 104. The patient was still being nursed and was taking orange juice apparently without trouble. Physical examination was essentially negative then except for swollen red drums, slightly red and swollen pharynx and cranio tabes. He recovered in three days with sulfadiazine treatment. Ten days later he was sick again with exanthem subitum.

September 10, 1943. After a slight diarrhea for a week he suddenly developed a chill and then a convulsion. Physical examination: temperature 104.8 (R), the neck was not stiff. The active convulsion was over but the patient seemed semi-stuporous. Examination of the skin showed a few petechiae scattered about. Physical examination was otherwise essentially negative. The patient was sent into the Medical College of Virginia Hospital, where the initial attempt at a blood culture went awry. A lumbar puncture returned a clear fluid. The patient was started on sulfadiazine immediately after the puncture and was well and back home on the thirteenth. Laboratory report: a blood culture (obtained after treatment had started) remained sterile. No positive diagnosis was possible but a probable diagnosis of meningococcus septicemia seems justifiable. Blood counts were: RBC 4,400,000; WBC 23,700; hemoglobin 70 per cent; PMN 52 per cent; large lymphs 24 per cent; small lymphs 22 per cent; Türcks cells 2 per cent. Throat culture: negative for hemolytic streptococci and diphtheria. Subsequent dealings with this patient revealed that his health was better when orange juice was replaced entirely by ascorbic acid.

4. A. F. Fourteen months old. Wt. 22½ lbs.

February 10, 1944. The patient's past history was essentially negative except for several colds. He was unable to take orange juice because of vomiting and

eruptions. He took ascorbic acid daily. He had slight cranio tabes when first seen at six months of age. Present illness—slight cough for two days, feverish the night before and would jump and cry out in his sleep. A rash was noted today. (An aunt had what was thought to be a mild measles two weeks previously.)

Physical examination: temperature 100.2 (R), a macular papular eruption was scattered generally over the skin. Suboccipital nodes were palpable. Eyes normal; ears, right, normal, left, slightly thick; slightly dull; apparently a collapsed blob; nose slightly congested. Pharynx slightly granular, not red. No Koplik spots were present.

About 2 P. M. the patient had a chill and possibly a spasm; temperature shot up to 106 (R). Emergency treatments such as baths, aspirin, etc., were given. When seen at 7:00 P. M. the temperature was 102.4. The patient vomited when he sat up. The neck was not definitely stiff. No Kernig sign was present. The eruption noted in the morning had disappeared, but from fifteen to twenty small petechiae about one to two millimeters in diameter were found. The patient was started on sulfamerazine, 1¼ tablets (.5 gm.) and ½ tablet every eight hours, after blood had been taken for counts and culture.

February 11, 1944. Temperature 100 (R) but the neck was retracted and stiff. Kernig sign was negative. The rash was less noticeable.

February 12, 1944. No more vomiting but the patient was fretful during the night. His head was retracted and the neck was stiff. His knee jerks were slightly exaggerated. Kernig sign was negative. A lumbar puncture revealed a cloudy fluid under pressure. Sulfamerazine was stopped and sulfadiazine, about one grain per pound of body weight daily, was started.

February 13, 1944. The patient was much better. He stood up in his crib and played.

February 14, 1944. No more fever. The skin was clear. The reflexes were normal, and the patient seemed well.

The laboratory report was as follows: RBC 4,800,000; WBC 5,800; hemoglobin 78 per cent; juvenile 3 per cent; stab 32 per cent; segmented 16 per cent; lymphocytes 41 per cent; monocytes 3 per cent. Description of the smear: The red blood cells appeared microcytotic but were normal in shape and hemoglobin content. No immature red cells were

seen. The white cells showed marked toxic degeneration. The blood culture was positive for meningococci. Spinal fluid examination: Cell count 679 cells per cu. mm. nearly all of which were granulocytes. Stained smear showed gram-negative intracellular diplococci. Spinal fluid culture on chocolate agar under increased CO<sub>2</sub> tension showed meningococci. Spinal fluid sulfamerazine: 2:75 mgs. per 100 cc.

5. P. M. Three years and ten months old. This patient has been under my care since she was a few days old. The mother has vasomotor rhinitis and an older brother was found to be sensitive to numerous foods and inhalants when he was examined by an allergist. The patient had very active reflexes and an ankle clonus in infancy. She was also subject to seborrhoea and to various skin eruptions. Her temperature was found to be subnormal as a rule and for some time she was given thyroid (Armour), one-half grain daily, apparently with benefit. Sensitivity to orange juice was suspected on several occasions, but a clear cut clinical effect from elimination was not obtained.

February 16, 1944. The patient started the day with vomiting and fever of 102, after a restless night, apparently due to a very stuffy nose. She had had a head cold and stuffy nose for the preceding ten days but had had no fever and no loss of appetite. After the original vomiting spell the child had a hard chill which lasted about two hours. She vomited a second time and complained of sore throat and headache.

Physical examination revealed a temperature of 105 (R). The conjunctivae were slightly red and the nose was very stuffy. The pharynx was clean and only slightly injected, but a few pin-point lesions were noted on the palate, apparently petechiae. The skin was clear. The heart, lungs, abdomen, and reflexes were about normal. A voided specimen of urine was clear and yellow.

Sulfadiazine, about one grain per pound of body weight daily, was prescribed, with directions to start immediately after blood culture and counts were taken.

February 17, 1944. Mother reported that the child's temperature fell to 99.8 (R) after a restless night. The patient had complained of headache and had vomited again during the preceding evening. Physical examination was essentially normal except for a slightly stuffy nose.

February 18, 1944. Mother reported that the child had had no more fever and was feeling fine. Dr. Richard C. Neale, however, reported that meningococci were found in the blood culture. The blood counts were as follows: RBC 4,479,000; WBC 15,500; hemoglobin 76 per cent; juvenile 2 per cent; stab 10 per cent; segmented 77 per cent; lymphocytes 11 per cent. Description of the smear: The red blood cells appeared normal in size, shape, and hemoglobin content. No immature red cells were seen. The white cells appeared normal.

#### COMMENT

Five cases of meningococcemia—three proved and two probable—were seen within a period of twelve months. Previously, all cases of meningococcic infection recognized by the writer had involved the meninges before they were diagnosed. In this series only one case developed a clinical meningitis, and he had received apparently an inadequate dose of sulfamerazine during the septicemic stage. An analysis of these brief reports shows that all of the children had preceding symptoms of a respiratory infection which seemed mild. The onset of the septicemia was abrupt, with high fever, chill or convulsion, and the children appeared seriously ill. One patient (A.F.) showed the prodromal, probably toxic rash, a few hours before the petechial eruption, which was discovered after the chill or convulsion. Only one patient (P.M.) failed to have the petechial eruption on the skin, and she had small petechiae on her palate. Her symptoms otherwise suggested the onset of a septicemia so definitely, a provisional diagnosis was made and treatment was started immediately after the blood was taken for culture.

This series of patients obviously is too small to permit drawing any conclusions. It is interesting to note, however, that all these patients presented evidence of a food allergy with at least four and possibly all five showing sensitivity to orange juice. Those same children also had had cranio tabes and the tendency to exaggerated deep reflexes, easy excitability and fright that so often seems to accompany sensitivity to orange. One child presented evidence of an old hemiplegia and slight convulsive seizures of the petit mal type, without a history of difficult or apparently traumatizing birth. Subsequent experiences suggested that the convulsions probably were allergic in origin. Whether or not children with the particular type of constitutional



make-up represented by these patients are especially susceptible to meningococcic infection can only be surmised from the evidence presented. Clinical experience has convinced me, however, that this type of child becomes less susceptible to acute infections after the offending foods have been eliminated from the diet and suitable substitutes, e.g., ascorbic acid for orange juice, have been provided.

The typical eruption of meningococcic septicemia is petechial in type, often small in size, and the

lesions may be few in number so that a search of the entire body may be necessary to find them. The discovery of petechiae, however, shortly after the stormy onset of an illness, points the way to the diagnosis and to a very satisfactory treatment. Sulfadiazine, in doses approximately one grain per pound of body weight daily, is capable of curing meningococcemia within twenty-four hours and at this time seems to be the drug of choice.

1004 West Franklin Street.

### New Method for Reducing Excretion of Penicillin Is Effective.

A method whereby the amount of penicillin required for effective treatment can be reduced or the concentration of the drug in the blood stream can be maintained and which had previously been tried successfully on dogs has been found satisfactory for human beings, Karl H. Beyér, M.D.; Harrison Flippin, M.D.; W. F. Verwey, D.Sc., and Roland Woodward, B.S., Glenolden, Pa. report in *The Journal of the American Medical Association* for December 16.

One of the disadvantages of penicillin treatment is the great rapidity with which the drug clears from the blood stream and appears in the urine. In the new method the penicillin, in a solution of sodium para-aminohippuric acid instead of in a glucose solution, is administered continuously into a vein. Para-aminohippuric acid is a member of a group of compounds which increase the excretion of urine.

The four investigators explain that when the compound is administered simultaneously with penicillin it competes with penicillin for the same excretory mechanism in the kidneys. By so doing the rate of elimination of penicillin by the kidneys is much reduced thereby slowing considerably the rate of fall

of the concentration of penicillin in the blood stream. The original work was done on dogs.

"In view of the widespread interest in this research," the four men say, "and the implications of the possible therapeutic [treatment] efficacy of the combination, it was decided to obtain data on a few patients to determine whether the simultaneous administration of para-aminohippuric acid with penicillin did produce an elevated plasma concentration of the antibiotic agent. Such a program would also permit us to study the patients carefully for any untoward reactions to the therapy so that we might be able to call these effects to the attention of other investigators."

The tests were made on 9 patients. In every instance the administration of para-aminohippuric acid with penicillin caused at least a twofold increase in the plasma level of penicillin. The penicillin concentration was in direct relationship to the para-aminohippuric acid concentration. When the latter was highest the penicillin level was increased more than fivefold.

"The combination of penicillin and para-aminohippuric acid therapy," the investigators say, "cannot be said to have influenced deleteriously the physical condition, the blood picture or the illness of any of the patients. . . ."

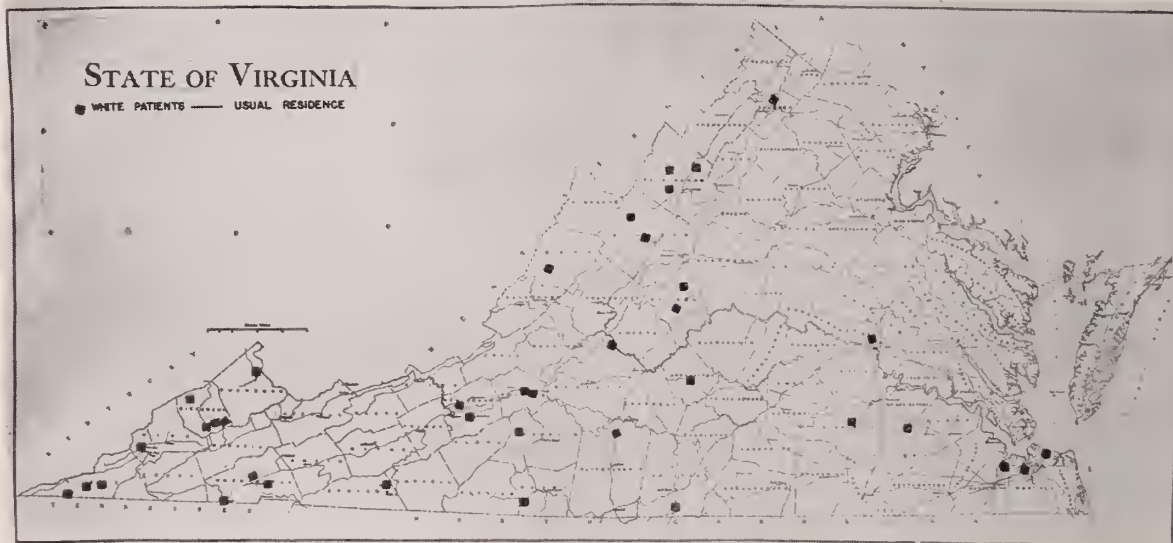
## REPORT OF MATERNAL DEATHS

MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

## Ninety-Three Deaths Due to Eclampsia.

A comparison of these maps with that shown in the December issue of the VIRGINIA MEDICAL

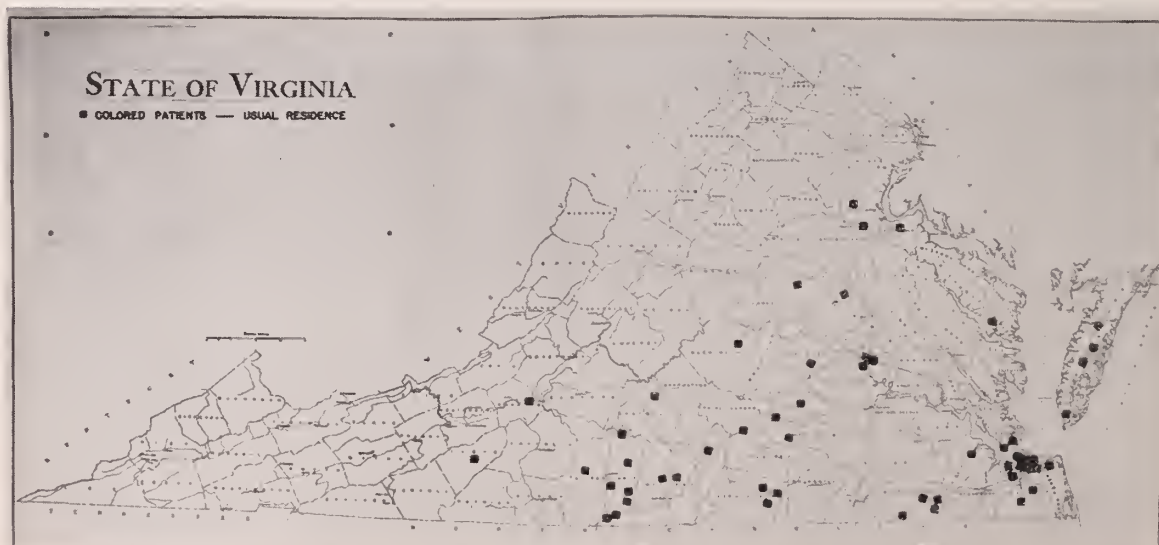
of eclampsia is not known. There were 39 white eclamptic patients and 54 colored in the 607 maternal deaths that occurred during the 2½ year



MONTHLY will show a shift in concentration in that the deaths due to eclampsia among white patients

period from December, 1939, to May, 1942.

Deaths due to this disease occurred 3.6 times more



is greater in the western half of the State. This may present a distorted picture when the incidence

often in colored patients. The rate for white patients was .377; for colored 1.369. Approximately

one-fourth of the State's population is composed of negroes and these live chiefly in the southeastern portion.

Since the distribution of the cases of eclampsia is not known it cannot be stated that the disease occurs less often among white than colored patients in the southeastern area of the State. There is neither anything to show that the disease is more severe in colored patients in the eastern part of the State nor an explanation for the larger number of deaths occurring in white patients in the western part of the State.

The problem of prenatal care may be one of the answers to the fact that deaths continue to occur because of this disease. Thirty white and 48 colored patients were known to have had no prenatal care. The committee felt that 8 of the 15 patients who had prenatal care were not treated during the eclamptic period according to generally accepted procedures.

### BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

**American Medical Practice in the Perspectives of a Century.** By BERNHARD J. STERN, Ph.D., Lecturer in Sociology, Columbia University; Visiting Professor of Sociology, Yale University. New York. The Commonwealth Fund. 1945. ix-156 pages. Cloth. Price \$1.50.

**Personal Mental Hygiene.** By DOM THOMAS VERNER MOORE, O.S.B., M.D., Ph.D., Professor of Psychology and Psychiatry, Catholic University of America. Grune and Stratton. New York. 1944. 331 pages. Cloth. Price \$4.00.

**Taber's Dictionary of Gynecology and Obstetrics.** By CLARENCE WILBUR TABER, Medical Editor and author of Taber's Cyclopedia Medical Dictionary, etc. With the collaboration of MARIO A. CASTALLO, M.D., F.A.C.S., Assistant Professor of Obstetrics, Jefferson Medical College; etc. Philadelphia. F. A. Davis Company. 1944. Over 700 pages. Cloth. Price \$3.50.

**Atlas of the Blood in Children.** By KENNETH D. BLACKFAN, M.D., Late Thomas Morgan Rotch Professor of Pediatrics, Harvard Medical School; Late Physician-in-Chief, Infants' and Children's Hospitals, Boston. LOUIS K. DIAMOND, M.D., Assistant Professor of Pediatrics, Harvard Medical School; Visiting Physician and Hematologist, Infants' and Children's Hospitals, Boston. With Illustrations by C. MERRILL LEISTER, M.D., Associate Pediatrician, St. Luke's Hospital, Bethlehem and Allentown General Hospital, Allentown,

Pa. The Commonwealth Fund. New York. 1944. xiv-320 pages. Cloth. Price \$12.00.

**Ventures in Science of a Country Surgeon.** By ARTHUR E. HERTZLER, M.D. Halstead, Kansas. 1944. 304 pages. Illustrated. Cloth.

The author of "Horse and Buggy Doctor" here describes his experimental investigations in pathology and surgery, interspersed with anecdotes from his country practice, and philosophical discussions. His novel treatment of sciatica by injection of quinine-urea solution into the sciatic nerve does not appeal to a physiologist, in spite of the excellent clinical results he reports. Unfortunately, this book is not very interesting and has more typographic errors than should be found in a scientific work. The author takes many "cracks" at teachers of the basic medical sciences, such as for requiring memorization rather than thinking. This is of course true of any poor teacher, but he neglects to mention the typical mistakes of part time clinical teachers, who are so prone to confuse students by using proprietary names of drugs and antiquated terminology, and who too often know less of such subjects as endocrinology than the students whom they teach. The author's aim in encouraging practitioners to do experimental work is both praiseworthy and badly needed, but his rambling style will not encourage many people to read the book.

R. J. M.

**Virus Diseases In Man, Animal and Plant.** By GUSTAV SIEFFERT. A Survey and Reports Covering the Major Research Work Done During the Last Decade. (Translation by Marion Lee Taylor, Ph.D.) Philosophical Library, New York. 1944. 332 pages. Cloth. Price \$5.00.

This book is a survey of the literature in virus research up to 1938. The bibliography is extensive, but heavily weighted with European references. The subject matter is well covered, but good correlation has not been achieved. It suffers from lack of judicious selection. The English translation is pedantic; transposition of words or meanings is not infrequent. Many "Germanisms" have been preserved. More thorough proof reading would have eliminated many mistakes in spelling and sentence structure. This book will serve as a useful reference, but cannot be favorably compared with recent American works on the same subject.

MORRIS A. BOWIE, MAJOR, M.C.,  
Chief, General Medicine Section,  
McGuire General Hospital, Richmond.



## CORRESPONDENCE

**German Measles as a Cause of Congenital Defects.**

VITAL STATISTICS APPEAL TO THE PHYSICIANS  
OF VIRGINIA

TO THE EDITOR:

An editorial in the November number of the VIRGINIA MEDICAL MONTHLY reviews an unusual study made through an appropriation by the State of South Australia, on which Dr. Charles Swan and associates reported in full in the *Medical Journal of Australia* (Sydney) for September 11, 1943. This followed a previous report by Gregg, October, 1941, of 78 congenital cataracts, with few exceptions following German measles of the mother during the first two months of pregnancy. In 44 cases congenital heart lesion was also present.

Dr. Swan's study found that other congenital defects, such as club feet, deafness, microcephaly, and mental retardation, followed German measles of the mother during the early months of pregnancy. A few also followed mumps, true measles, influenza, and infections of the throat.

Heretofore heredity has been considered a principal cause of congenital deformity. This finding of rubella and other exanthema as a major cause of congenital defects suggests an opportunity in connection with the report of births, stillbirths, and deaths to determine whether a similar result can be found in Virginia. This study can be made by the Bureau of Vital Statistics through the birth certificates of children born with congenital defects.

Careful inquiry should be made of the mother of any history of German measles or other exanthema during the first two or three months of pregnancy. In some cases she may have observed only a slight eruption, no diagnosis having been made by a physician. Contact with these diseases or even their presence in the home or community may be recalled though she cannot recall symptoms of her own. All information obtainable can be put on the back of the certificate. Also secure any information possible as to whether other members of the family or forebears or blood relatives of either parent have had similar defects.

The Australian study seems to have included only living children which survived, but doubtless neonatal deaths and stillbirths may also be involved. The Bureau of Vital Statistics is now revising its

yellow stillbirth form 83 and is including on it inquiries as to the presence of any exanthemata of the mother in stillbirth deformities.

Dr. Roncs in the *Medical Annals of the District of Columbia* describes 4 cases of congenital cataract, 3 following German measles of the mother and 1 true measles.

To the Bureau of Vital Statistics this subject is appealing, and we trust that the physicians of Virginia will be interested in the study and report on every case of congenital defect, living or dead. A similar history may also be placed on the back of the death certificates of infants with congenital deformities.

This information will be considered confidential and if on the back of the certificate or on a separate sheet will not appear in any copies given out.

W. A. PLECKER, M.D.,

*State Registrar, Bureau of Vital Statistics.*

**Keep the Mastery of Your Own Dollar.**

Harrisonburg, Va., December 7, 1944.

TO THE EDITOR:

Is the recent election to be considered a mandate to weave into our economic fabric the various fixations of tax supported socialistic schemes which deprive individuals of all thought of themselves? I think not. Will the Social (In-)Security Act be our Roman Holiday, to complete chaos, and a repetition of the Dark Ages? I believe it will.

Availability, created by a payroll deduction, of all the medical and hospital care which one may think he needs will be surely curtailed by the costs of administration and expanding facilities. Both doctors and hospitals will be paid less and less. In spite of expanded coverage, facilities and so-called protection as baits, the citizen will be put on the list to await his turn for a bed as in Great Britain.

The writer in private practice served without charge for fourteen years with other doctors in a hospital dispensary for walking patients. The visits rose from 27,516 in 1929 to 62,757<sup>1</sup> in 1940, approximating population.

Doctor Goldwater reported a similar tendency in New York City. In 1920 out-patient visits were 2,782,283, and rose to 7,118,598 in 1936, also approximating population.

During the "Golden Decade" of the 1920's, hos-

pital admissions ranged upward to six millions—plus. In 1931 they rose to 7,155,976; in 1935 to 7,717,154, and doubled by 1943, totaling 15,374,698.<sup>2</sup>

When the field of Medicine succumbs to the regulations of Social (In-)Security, it then becomes a free-for-all-scramble on the part of the taxpayer to get back something for something paid.

A two-year study in Socialized Medicine in the capacity of Health Officer and City Physician for a salary sheds some light on the subject. During the first year compensation averaged 22 cents for maternity operations, anaesthetics, minor surgery, fractures, vaccinations, house visits, office calls, hospital visits, etc. Courage to compile the statistics for the second year was lacking, but instead a letter of resignation was delivered.

Further studies in Socialized Medicine led the writer to serve the mine industry for more than a year. It would serve the War Effort, too. The offices of the mine doctors overflow with perfectly well people who get a look and a bottle; walking patients crowd the hospital dispensaries, and bed patients are discharged more or less prematurely to make room for other admissions. Night and day service to folks who needed no medical service in

most cases failed to serve the War Effort, but did furnish previews of contributory and Federalized Medicine. Payroll deduction was \$4.00 per month for medical and hospital services.

There is no such thing as *adequate* medical or hospital care. What is adequate for one is not for another, and differs with the same person at another time, with the same malady. Under any contributory system, whether a Municipal Tax System, a co-operative, an insurance, a special "Security" Tax, or any other pre-payment plan, adequate care increases actuarially from month to month and year to year.

As costs rise, premiums and taxes must rise, especially when payments to those who serve cannot be further reduced.

Sickness is present when spending is from one's own pocket, but not necessarily present when spending is from a pool of funds.

Is Medicine to be Federalized to furnish jobs for Bureaucrats? There were approximately 20 per cent more office holders in the German system than there were doctors in 1935.

ERNEST L. SHORE, M.D.

#### REFERENCES:

1. Atlantic City Hospital.
2. Letter from A. M. A.

### Floral Eponym (23)

OPUNTIA BIGELOVII, ENGELM.

JOHN MILTON BIGELOW, 1804-1878

THE Golden Spined Jumping Cholla, or Teddy Bear Cactus, botanically known as *Opuntia Bigelovii*, grows best in the arid parts of the Southwest and in the hottest southern exposure of rocky foothills and slopes. It is densely covered with spines and is the most difficult to handle of all the cylindrical opuntias.

Little is known about Dr. Bigelow in medical circles. His name does not appear in the various cyclopedias of medical biography or in the biographical dictionaries of the public library. Dr. S. F. Blake, Senior Botanist of the U. S. Department of Agriculture, has kindly furnished us the following information concerning him: Dr. John Milton Bigelow was a physician in Ohio and a botanist of some note. He was on the Mexican Boundary Survey in the early fifties under Emory. A brief account of his life is given in a footnote in C. S. Sargeant's *Silva of North America*. A lengthy biographical sketch is to be found in the *Ohio Archeological and Historical Quarterly* (51:313, 1942). There is also considerable information about Bigelow in Andrew D. Rodgers' "John Torrey" (Princeton Press, 1942).

## PUBLIC HEALTH

I. C. RIGGIN, M.D.,  
*State Health Commissioner of Virginia*

The report of the Bureau of Communicable Diseases of the State Department of Health for November, 1944, as compared with the same month in 1943, and for the period of January through November, 1944, compared with the same period in 1943, follows:

	Nov.	Nov.	JAN.-	JAN.-
	1944	1943	1944	1943
Typhoid and Paratyphoid Fever	6	15	120	210
Diarrhea and Dysentery	243	258	6,046	5,428
Measles	22	853	17,073	10,518
Scarlet Fever	291	223	2,630	1,630
Diphtheria	58	49	294	362
Poliomyelitis	41	4	750	60
Meningitis	7	27	490	800
Undulant Fever	1	3	36	36
Rocky Mountain Spotted Fever	1	2	81	56
Tularemia	2	6	43	48

## THE TEN LEADING CAUSES OF DEATH IN VIRGINIA

Ten causes of death accounted for more than three-fourths (77 per cent) of all deaths in Virginia in 1943. This fact is of some significance in

hood, such as diarrhea, enteritis, and whooping cough become relatively unimportant in later years. On the contrary, diseases of the heart, cancer, and nephritis—less important at the younger ages—become principal causes of death during adult and older age periods.

The table below shows the leading ten causes of death among all ages in the State according to rank in 1943 in comparison with the principal causes twenty years ago. It is noted that eight of the causes were the same in 1943 as in 1924. Relative rank during the two periods, however, varied somewhat with the exception of heart disease, which has continuously maintained first place.

Pneumonia-influenza and tuberculosis, occupying second and third positions twenty years ago, have dropped to sixth and seventh places in 1943. On the other hand, cerebral hemorrhage, nephritis and accidents in the fourth, fifth and sixth positions, respectively, in 1924, rose to second, third and fifth ranks last year. Cancer, in the seventh place in

THE LEADING TEN CAUSES OF DEATH IN VIRGINIA

1943			1924		
Causes of Death	Number	Per Cent	Causes of Death	Number	Per Cent
All Causes	28,707	100.0	All Causes	29,175	100.0
Heart disease	6,896	24.0	Heart disease	3,863	13.3
Cerebral hemorrhage	2,941	10.2	Pneumonia and influenza	3,030	10.4
Nephritis	2,478	8.6	Tuberculosis (all forms)	2,719	9.3
Cancer	2,363	8.2	Cerebral hemorrhage	2,630	9.0
Accidents (all types)	2,181	7.6	Nephritis	2,445	8.4
Pneumonia and influenza	2,063	7.2	Accidents (all types)	1,688	5.8
Tuberculosis (all forms)	1,397	4.9	Cancer	1,481	5.1
Premature birth	989	3.5	Premature birth	1,205	4.1
Diabetes	505	1.8	Diarrhea and Enteritis	964	3.3
Syphilis	376	1.3	Puerperal causes	419	1.4
All other causes	6,518	22.7	All other causes	8,731	29.9

medical and public health fields, as it suggests that the major problem of medical science, numerically at least, involves a comparatively small group of diseases and conditions.

The relative importance of different causes of death, however, varies greatly during the life-span. Certain diseases as leading causes in early child-

hood, such as diarrhea, enteritis, and whooping cough become relatively unimportant in later years. On the contrary, diseases of the heart, cancer, and nephritis—less important at the younger ages—become principal causes of death during adult and older age periods.

The marked reduction in deaths from the com-



municable causes resulting largely from advances in sanitation, immunization, and medical treatment is reflected in the lowered rank of pneumonia, influenza, tuberculosis, and diarrhea among the leading causes in recent years. The disappearance from the group of ranking causes of maternal mortality is noteworthy. On the contrary, deaths from the diseases of middle life and old age, cerebral hem-

orrhage, nephritis and cancer, have increased until they now hold the highest ranks successively, with the exception of heart disease. No accurate measure of rate increase for these causes, however, can be made which does not make allowance for the aging of the population. These gains are due, in part at least, to the larger relative proportion of persons in the older age groups.

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### WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

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*President*..... MRS. PAUL C. PEARSON, Aylett  
*President-Elect*..... MRS. P. M. CHICHESTER, Abingdon  
*Recording Secretary*..... MRS. C. C. SMITH, Norfolk  
*Corresponding Secretary* MRS. HAWES CAMPBELL, Turpin  
*Treasurer*..... MRS. REUBEN F. SIMMS, Richmond  
*Chairman, Press and Publicity* MRS. A. G. SHETTER, Richmond.

#### Norfolk Auxiliary.

Due to the inclement weather the regular fall meeting of the Woman's Auxiliary to the Norfolk County Medical Society was not held on November 20 but was postponed to December 4. However, an Executive Board meeting was held on the 20th.

At the December meeting, it was decided to sponsor a subscription supper party in January for the members of the Norfolk County Medical Society and all medical officers in the community, and a committee was appointed to carry out plans.

The organization accepted the recommendation of the Board that the spring meeting be followed by a luncheon, as in former years, a two-course luncheon to be held at Ames and Brownley.

The recommendation that the Auxiliary send Christmas Greetings to all former members of the Norfolk County Medical Society who are now serving with the armed forces, was also accepted. The President appointed Mrs. Charles Lupton to head a committee to do this.

Mrs. James Anderson, War Service Committee Chairman, reported that \$18.00 had been sent from the Auxiliary to the Tidewater Camp and Hospital Association to be used in purchasing Christmas gifts for convalescent soldiers. Mrs. Southgate

Leigh, the President, announced, for the Public Relations Chairman, Mrs. Brock Jones, Jr., that the Tea, tentatively set for January, had been postponed to February 7, at which time the committee had arranged to have a speaker on Rehabilitation of Soldiers.

The President announced that it had been suggested that the Archives of the Auxiliary be rearranged and revised. She appointed a committee to do this, consisting of Mrs. Rufus Kight, Historian (to be Chairman), Mrs. Franklin D. Wilson, and Mrs. William N. Harris.

Mrs. Brock Jones, Jr., War Service Chairman, had been approached on the subject of the Auxiliary sponsoring a Christmas Tree in one of the wards of convalescent service men. Specifically, this would mean that members help in trimming the tree and serving refreshments. It was decided to cooperate in this work through Mrs. Jones.

#### Richmond Auxiliary.

The regular monthly meeting of the Woman's Auxiliary to the Richmond Academy of Medicine was held at the Academy Building, November 17, with 12 members present.

Mrs. Andrew Shetter called the meeting to order and conducted the installation of the following officers: President, Mrs. B. B. Bagby, Jr.; vice-president, Mrs. P. N. Pastore; secretary, Mrs. G. S. Row; treasurer, Mrs. L. C. Brawner; and corresponding secretary, Mrs. A. F. Bagby.

Mrs. Brawner, the treasurer, reported credits of \$2.00 in contribution and of \$1.00 in dues and reported a check of \$2.50 written for subscription to

*Hygeia* Magazine to be sent to the local tuberculosis sanatorium. There is a bank balance of \$130.19.

Mrs. Shetter read a letter from Dr. Haag, who expressed appreciation to the Auxiliary for the cooperation in making the meeting of the Medical Society of Virginia a success.

Plans were made for a luncheon at the December meeting. It was decided that a charge of \$.25 be made for each luncheon. Members will exchange inexpensive amusing gifts.

Motion was made by Mrs. Welchons and seconded by Mrs. Pastore that the philanthropic work at the the Sheltering Arms Hospital be continued—carried.

Mrs. Pastore introduced the guest speaker, Mrs. Roland Main, who gave an enlightening talk on the work of the Children's Aide. She touched on the history of the work, and on other agencies in Richmond that work with children. She spoke in more detail on the work of the Children's Aide and presented several very interesting case histories.

EVELYN ROW, *Secretary*.

#### **Northampton-Accomac Auxiliary.**

The Woman's Auxiliary to the Northampton-Accomac Medical Societies held its regular quarterly meeting on November 7, at the home of Mrs. W. Carey Henderson, Nassawadox. Twenty-one members were present.

The business meeting included minutes of the April meeting, Treasurer's and Committee reports, and discussion of the Auxiliary's annual Christmas

gift to the Northampton-Accomac Hospital. It was voted to give \$75.00 for this.

The following officers were elected for 1945: President, Mrs. C. E. Critcher, New Church; vice-president and president-elect for 1946, Mrs. S. S. Kellam, Cape Charles; secretary, Mrs. W. L. Cosby, Painter; and treasurer, Mrs. W. J. Sturgis, Nassawadox.

Mrs. J. L. DeCormis gave an interesting account of the State Meeting in Richmond. The highlights of the meeting included an address by the Hon. Colgate W. Darden, Jr., Governor of Virginia, who gave a splendid talk on the State Health Program, and the plans for three yearly examinations of school children, which is to cost \$3,000,000, stressing that the children of today are the men of tomorrow. At the luncheon for the Auxiliary, Mrs. Darden's slides of Wild Bird Life in technicolor were greatly enjoyed. The Auxiliary's Annual Report to the meeting was read by Mrs. DeCormis.

The retiring president, Mrs. W. Carey Henderson, thanked all chairmen and members for their cooperation and moral support, and turned the meeting over to the incoming president, Mrs. C. E. Critcher. Following this there was a pleasant social hour with refreshments.

The January meeting will be held at the home of Mrs. B. N. Mears at Belle Haven.

CATHERINE R. TROWER (MRS. HOLLAND),

*Chairman, Press and Publicity.*

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#### **Red Cross War Fund.**

Keep your Red Cross at his side. Never was this more important than today. Long after swords have been beaten into plowshares the Red Cross will have much to do. Even after the last gun has been fired, many a month will pass before all our fighting men are home. Some will be confined in hospitals for long periods of recovery. Traditional Red Cross service for these men who have sacrificed so much must continue unabated. It is a sacred obligation delegated to your Red Cross.

No less sacred is the obligation to stand by with all necessary aid while veterans of this war, now being returned to civil life, adjust themselves to new conditions, prepare to take their rightful places in field and factory. The welfare of the families of our men in uniform, their wives and children, their

aged parents, must be guarded to see they do not suffer want in these trying times. The refugees and waifs of war need help—help such as only the Red Cross is prepared to give in a war-scarred world.

Those essential and humanitarian services which at home have characterized the Red Cross through the years must be continued: disaster relief, home nursing instruction, nurse's aide training, the many volunteer services, and other activities.

Though the roar of guns may cease, human needs remain. The Red Cross can meet these only with your continued generous support. The President has designated March as Red Cross Month, the period in which the 1945 Red Cross War Fund will be raised. Red Cross activities are financed solely from voluntary contributions and gifts. We all must do our part.

# VIRGINIA MEDICAL MONTHLY

*Official Publication of the Medical Society of Virginia*

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,  
*Editor Emeritus*

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*Editor*

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*Business Manager*

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### E. M. I. C.

AT the second Emergency Maternity and Infant Care Conference the growth of the Plan was reviewed and some details of administration were discussed. The program as a nation-wide service was first made possible on March 18, 1943, when Congress voted a special appropriation of \$1,200,000 to carry forward services that had been begun under the provisions of the Social Security Act I, Title V, Part I. In April, 1943, the program was established in thirteen States. By March, 1944, it was in operation in all forty-eight States, the District of Columbia, Alaska, Hawaii, and Puerto Rico. Ninety-one per cent of the total cases authorized are maternity cases and approximately 86 per cent of the maternity patients delivered have received hospital care. Some half a million deliveries a year are being paid for under the Plan. New cases are authorized at the rate of 43,000 a month. The plotted curve of new cases reached its peak in June, 1944. Since then there has been a leveling off with a slight decline in some months. The Plan was adopted in Virginia in July, 1943. Through September, 1944, 10,574 maternal and infant care cases have been authorized. There were 994 authorizations in September.

It was gratifying to note a disposition on the part of all members of the Conference to simplify the paper work of the doctor in every possible way. Physicians and officials of clinics participating in the program, whenever possible, must check the service man's present rank or rating and serial number. A letter, if franked, bears this information, or it may be obtained from the wife's allowance card or other official communications. Such evidence must bear a date not more than two months prior to the time of application for the service. A change in the husband's status after the date of the application does not affect the service. It was suggested that application for the infant's care be made at the time the wife applies for the maternity service. The



Children's Bureau will take this suggestion under advisement. Such things as special examination, basal metabolism, x-rays, etc., were discussed.

An unique development is the investigation of a federal bureau by a private agency. The University of Michigan School of Public Health has specialized in studying various health programs. When this \$43,000,000 experiment, as Dr. Nathan Sinai described it, came into being, they could hardly keep their hands off. The Children's Bureau welcomed the opportunity of being studied, and the investigation has already started. After a survey of the office in Washington, field workers will go to various States; California, Nebraska, Illinois, New York, Massachusetts, Mississippi, and Georgia, to see how the Plan is actually working. When this study will be completed and where it will be reported, Dr. Sinai did not say. At any rate, it should be interesting.

### **The Council on Medical Service and Public Relations Casts Off Its Swaddling Clothes**

THE Council on Medical Service and Public Relations is now eighteen months old and has begun to get about. The first regional conference with committees of the State Societies was held in Washington on December 6th. The participating States were New York, New Jersey, Delaware, Pennsylvania, Maryland and Virginia. On two preceding days the Council met with certain representatives of the Federal Government and Labor. The Chairman, Dr. John H. Fitzgibbon of Oregon, said that the C. I. O. had a fixed mind and wanted no conference. The A. F. of L. sent representatives who indicated that their union was not entirely sold on Federal plans for the distribution of medical care. Today's conference was with the State committees on medical service and Public Relations. Mr. J. W. Holloway, Jr., gave briefly the history of the formation of the Council on Medical Service and Public Relations. Dr. Joseph S. Lawrence outlined the program of the Washington office. Besides being a bureau of information on medical matters for the Congress and Federal departments, it planned to maintain a two-way news service on pending Federal legislation. It would keep the homefolks informed upon what was going on in Washington, and it wanted to know what the doctors back home thought on the same subjects. For instance, Dr. Lawrence said he had it from trustworthy sources that four modifications of the Wagner Bill would be presented in Congress early in February.

Lieutenant-Colonel Harold C. Lueth discussed the new Bureau of Information. Its function is threefold: 1. to make known to the doctors returning from the Armed Forces the available education facilities; 2. to give them the requirements of licensure in the various States; and, 3. to have available full information about population, medical and hospital facilities, living conditions, and climate of the various counties of the country that may be in need of doctors. In answer to a question, he said that only 4 per cent of the 11,000 questionnaires that had been analyzed from the doctors in the Armed Forces, indicated that they wanted a government job when they returned home.

Dr. Carl Peterson of the Council on Industrial Health discussed the tremendous problem of rehabilitation. From the general discussion that followed, it was evident Virginia is handling this problem more intelligently than most States.

The afternoon was devoted to discussing Voluntary Health Insurance schemes. It was evident at the start that the impression had gone abroad that the American Medical Association favored indemnity plans. This, the Chairman repudiated. When this fog was dissipated, the discussion waxed hot and interesting over the relative merits of the service plan and the indemnity plan, with some minor discussions on how close a tie-up, if any, there should be with the Blue Cross Hospital Plans. We gathered that in some places the Blue Cross Plans were beginning to run the hospitals in a manner that the local profession resented. However, the main discussion centered about medical service *vs.* indemnity with Dr. Norman M. Scott leading the medical service plan-ites, and officers of the Western New York plan, the indemnity forces. It soon became evident that the Western New York and the New Jersey Plans were actually furnishing the same service. In Western New York there was a "gentleman's agreement" that the doctors would accept the scheduled fee in full payment for the lower-income group, and in New Jersey it was a matter of contract. Certain interesting side-lights came out in the discussion. For instance, in one locality in Pennsylvania there was considerable opposition to any plan because there was no opportunity for fee splitting.

It would be a miracle if the Council on Medical Service and Public Relations solves all the problems that arise from trying to practice medicine in this over-complicated civilization we live in. But, if its members go around and find out what these problems are, and how they are being solved or partly solved here and there, they will soon be in a position to give invaluable counsel.

### The Cancer Bulletin

AT the October, 1944, meeting of the Medical Society of Virginia, an appropriation was granted the Cancer Committee to prepare a series of bulletins on various phases of cancer treatment and diagnosis. The first bulletin appears in this issue of the MONTHLY. Copies have been mailed to the members of the Old Dominion Medical Society. Five more bulletins are planned during 1945.

The object is to provide the physicians of the State with a concise summary of practical facts about cancer, facts that are useful and applicable in everyday practice. The bulletins are being planned as a coordinated series. They will, therefore, be printed on a perforated sheet so that they can be detached and filed conveniently for ready reference in the office.

In these days of voluminous and numerous medical publications, it is difficult, if not impossible, for the busy physician to keep abreast of new developments, much less to find out which developments have been proved worthy of routine application. It is hoped that this bulletin will provide a useful digest on the subject of cancer, a disease which is an increasingly frequent problem in every doctor's practice and the cause of the second greatest number of deaths throughout the country.

PRESIDENT'S MESSAGE

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Since the State meeting in October, the Medical Service Plan, approved by the House of Delegates, has made strides in its organization, as evidenced by the outline published in the December issue of the VIRGINIA MEDICAL MONTHLY. Soon it is hoped actual enrollment of clients will take place. Your cooperation in furthering this or similar plans and in taking part in their development will be a definite step forward in caring for individuals in the lower income brackets. I am sure that both the profession and the public will profit from such an undertaking.

Those of you who read the editorial written by Mr. W. E. Garnett, Ph.D., in the November MONTHLY must realize how pressing the problem of providing rural medical care and the distribution of doctors in country districts has become. Each issue of our Journal points up with sad emphasis in the obituary column the further depletion of physicians in these areas. Efforts are being made to study more intensely possible solutions of this problem and, the Governor's Advisory Legislative Council has appointed a sub-committee, on which your society is well represented, to study the matter. Every effort will be made to arrive at an adequate plan which will better the lot of the country doctor and at the same time offer the best that modern medicine has to give to the rural people. It seems evident now that this cannot be done without State and local aid. I will try to keep the profession advised of the developments from time to time of the progress being made by this committee.

On December 6 in Washington, D. C., a sectional meeting was held, comprising representatives of the medical profession from New York, New Jersey, Delaware, Pennsylvania, Maryland and Virginia, to discuss with the Council on Medical Service and Public Relations of the American Medical Association various pertinent phases of the medical care problem. At this meeting your society was represented by Drs. Riffin, Rucker and myself. The first part of the program was taken up with a dis-

cussion of the activities of this committee and the program to be followed by the Washington office of the American Medical Association, whose representative is Dr. Joseph S. Lawrence. During this discussion, it was brought out that several bills containing medical social legislation would probably be presented to the next Congress. This committee is attempting to contact groups, such as labor, who are instigating such legislation, to work in conjunction with them and to discuss various mutually interesting phases of medical care.

A discussion of the plan for education and distribution of returning medical officers was given by Dr. Harold C. Lueth, and this was followed by an address on rehabilitation of the returning veterans, both of which are pressing problems. It was pointed out that a large number of soldiers now being discharged, 45 per cent, have neuropsychiatric disorders and only a few of these received adequate post-service care.

The afternoon session was spent in a round-table discussion on voluntary insurance plans. I believe I am right in saying that the consensus of opinion seemed to be that the American Medical Association committee should advocate several pre-payment voluntary insurance plans for experimentation, and that this Public Relations Committee should provide progressive leadership for the medical profession.

Your Committee on Clinical and Medical Education held a meeting recently at which plans for discharged medical officers from the Army and Navy were discussed at some length. Information is now being asked for from hospitals, medical schools and industry within the State, with reference to possible further training and relocation of these officers. It is hoped by this means that we can be of some help on a State level.

If, at any time, any member of the Society has a problem or problems to present to the Society, it is hoped that he will not hesitate to call on your president.

H. B. MULHOLLAND.



## News

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### Seaboard Medical Association.

At the annual meeting, held in Wilson, N. C., December 5-7, the following officers were elected: President, Dr. A. A. Burke, Norfolk; vice-presidents, Dr. R. L. Fike, Wilson, N. C.; Dr. R. Bryan Grinnan, Norfolk; Dr. John E. G. McLain, Sanatorium, N. C.; and Dr. Clayton W. Eley, Norfolk; and secretary-treasurer, Dr. Clarence Porter Jones (re-elected), Newport News.

The 50th Jubilee Annual meeting will be held at Virginia Beach, the latter part of 1945.

### Promotions in the Service.

The following promotions for Virginia Doctors in the Army Medical Corps have been noted:

Dr. Walter Lewis Nalls, Richmond to Lieutenant-Colonel.

Dr. Clarence C. Chewning, Jr., Richmond to Captain.

Dr. William D. Chase, McLean to Captain.

Dr. Carrington Williams, Jr., Richmond to Captain.

### Richmond Academy of Medicine.

At the annual meeting of the Academy in December, the following officers were elected: Dr. I. A. Bigger, president-elect; Drs. H. Hudnall Ware and Oscar L. Hite, vice-presidents; and Drs. Webster P. Barnes and Emily Gardner, members of the board of trustees for one year. These officers will be installed at the first meeting in January along with Dr. T. Dewey Davis who becomes president at that time.

### The Wise County Medical Society

Met in Coeburn on December 8 with twenty-two members and several visitors in attendance. Drs. Joe Culbertson, S. H. Rivers and J. H. Hagy were hosts at the dinner, following which Dr. Hagy presented a paper on "The Connecting Link". This gave the origin and charter members of the society, dating back to 1901. A colored talkie movie on "Modern Nutrition", as prepared by E. R. Squibb, was then shown.

Dr. Glen Foster is president of this Society and Dr. W. B. Barton, secretary. Both are of Stonegap.

### Mental Hygiene Committee.

Dr. H. B. Mulholland, President of the Medical Society of Virginia, has appointed Dr. D. C. Wilson of the University of Virginia as chairman of this committee to succeed Dr. O. B. Darden who died recently. Dr. Frank H. Redwood, Norfolk, has also been named a member of the committee.

### The Virginia Peninsula Academy of Medicine

Held its regular meeting on December 18 at Newport News, with the president, Dr. Frank A. Kearney, of Phoebus, presiding. Following a social hour and dinner, Dr. Edwin L. Kendig, Jr., Richmond, was the guest speaker, his topic being "Pathogenesis of Tuberculosis in Children". This was illustrated with lantern slides.

The Academy meets on the third Monday of each month at the Coca-Cola Recreation Hall. Dr. Robert H. Wright, Jr., Phoebus, is secretary-treasurer.

### News from the University of Virginia, Department of Medicine.

The Eleventh Annual Post-Graduate Course in Ophthalmology and Otolaryngology, sponsored by the Virginia Society of Ophthalmology and Otolaryngology, was held at the Medical School of the University of Virginia for four days, December 5, 6, 7, and 8. Sixty-four physicians registered for the course. The following lecturers appeared on the program:

Dr. Frederick M. Law, New York City; Dr. Paul H. Holinger, Chicago; Dr. Russell L. Cecil, New York City; Dr. John R. Page, New York City; Dr. Joseph D. Kelly, New York City; Dr. McLe-more Birdsong, University of Virginia; Dr. Marion Lawrence White, Jr., University of Virginia; Dr. James W. White, New York City; Dr. Wendell L. Hughes, New York City; Dr. William E. Fry, Philadelphia; and Dr. Paul A. Chandler, Boston, Mass.

Captain Alvin Swanson, United States Navy Medical Corps, was the chief speaker at the dinner held at the Farmington Country Club on the night of the 6th.

At the meeting of the University of Virginia Medical Society on Tuesday, December 5, Dr. Paul H. Holinger, Associate Professor of the Department of Otolaryngology, University of Illinois, gave an illustrated lecture on "Tumors of Bronchi".

Dr. McLemore Birdsong, Assistant Professor of Pediatrics, addressed the Augusta County Medical Society at their meeting on November 1. His subject was "Recent Advances in the Treatment of Purulent Meningitis". He also spoke to the staff of the Southside General Hospital in Farmville on the subject of "Meningitis".

Drs. Henry B. Mulholland, Robert V. Funsten, and Bruce C. Morton attended the meeting of the Richmond Academy of Medicine on November 28. Dr. Mulholland spoke on "The Problem of Rural Medical Care"; Dr. Funsten on "The effect of the Sister Kenny Publicity in the Treatment of Poliomyelitis"; and Dr. Morton on "Small Umbilical Hernias".

### Medical College of Virginia News.

Dr. E. Tribble Gatewood, professor of clinical otolaryngology, attended the annual meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago recently. Dr. Gatewood participated in the program with two lectures on Roentgen Ray Interpretation of Sinus Disease. Dr. Walter J. Rein, associate in ophthalmology, Dr. Luther C. Brawner, associate in ophthalmology, and Dr. Edgar Childrey, associate in ophthalmology, also attended the meeting.

Dr. Herbert C. Lee, assistant professor of surgery, has been elected a fellow in the American College of Surgeons.

Dr. Arden G. Howell, Jr., has been appointed professor of bacteriology and parasitology. Dr. Howell received his bachelor and master degrees in biology at the University of Richmond and his doctorate in biology at Harvard University. Prior to coming to the college he has been connected with the United States Public Health Service, Tulane University medical school, and the National Research Council.

Dr. Margaret DuBois has joined the staff of the college as director of its outpatient clinic, succeeding Dr. Fred J. Wampler, resigned. Dr. DuBois is a graduate of the University of Toronto school

of medicine, later taking graduate work in hospital administration at the University of Chicago. She was three years with the American College of Surgeons engaged in a survey of hospitals. Dr. DuBois has also spent some time in private practice.

Among those attending the meeting of the Southern Surgical Association in Hot Springs recently were: Dr. C. C. Coleman, professor of neurosurgery; Dr. I. A. Bigger, professor of surgery; Dr. Carrington Williams, clinical professor of surgery; Dr. Everett I. Evans, associate professor of surgery. Dr. Evans gave a paper on the Treatment of Burns and Shock.

Dr. I. A. Bigger, professor of surgery, and Dr. Herbert C. Lee, assistant professor of surgery, took part in the post-graduate lecture series at the Regional Hospital at Camp Lee on November 17.

Dr. H. Hudnall Ware, Jr., professor of obstetrics, was recently elected chairman of the section on obstetrics of the Southern Medical Association.

### Urology Award.

The American Urological Association offers an annual award "not to exceed \$500" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years. All interested should write the Secretary, for full particulars. The selected essay (or essays) will appear on the program of the forthcoming June meeting of the American Urological Association.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1945.

### Dr. Horsley Honored.

At the annual meeting of the Medical Society of London on October 23, Dr. J. Shelton Horsley, Richmond, was unanimously elected a Corresponding Fellow. This Society is the oldest institution of its kind in England and possibly in the Empire. It was founded by John Coakley Lettsom in 1773.

### **Fellows of the American College of Surgeons.**

The following initiates from Virginia were accepted into the fellowship of the College in 1944:

Dr. Wesley Fry, Alexandria.

Dr. Lyle J. Hansbrough, Front Royal.

Dr. William A. Johns, Richmond.

Dr. Herbert C. Lee, Richmond.

Dr. Leland R. O'Brian, Jr., Lynchburg

Dr. Samuel E. Oglesby, Lynchburg.

Dr. Milton Salasky, Norfolk.

Dr. Harry J. Warthen, Jr., Richmond.

### **Richmond Eye, Ear, Nose and Throat Society.**

The regular meeting of this Society was held on November 28. Officers were elected as follows: President-Chairman, Dr. Luther Brawner; vice-chairman, Dr. DuPont Guerri, III; and secretary-treasurer, Dr. Clifford A. Folkes.

Dr. Karl Kundert presented a case report of Carcinoma of the Soft Palate and Both Tonsils, which was discussed by Dr. E. U. Wallerstein. Dr. E. T. Gatewood gave a report of the Academy meeting in Chicago from the otolaryngological aspect and Drs. Walter Rein, Edgar Childrey, Jr., and Luther Brawner from the ophthalmological aspect.

### **Medical and Surgical Symposium.**

The second Annual Medical and Surgical Symposium, sponsored by the Watts Hospital Staff will be held at the Washington Duke Hotel, Durham, North Carolina, February 14-15. This particular symposium is given in celebration of the Fiftieth Anniversary of the founding of Watts Hospital. For further information, write Dr. W. W. Vaughan, Box 2172, Durham, N. C.

### **Dr. C. Howard Cain,**

Recently located in Shelby, North Carolina, is now serving as resident physician in the H. F. Long Hospital, Statesville.

### **Dr. P. R. Fox,**

Formerly of McComas, West Virginia, is now located at 2019 Monument Avenue, Richmond, where he is engaged in general practice. He is a graduate of the Medical College of Virginia in 1923.

### **Married.**

Dr. Harold Goodman and Miss Harriett Lewis, both of Richmond, December 3. He is a graduate of the Medical College of Virginia, class of September, 1944.

Lt. Thomas Grasty Bell, MC., AUS., Staunton, and Miss Louisa Lile Tucker, formerly of Richmond, but now of Cleveland, December 24th. Lt. Bell is a graduate of the University of Virginia, Department of Medicine, in December 1943.

### **Dr. Oscar Swineford,**

University of Virginia, Charlottesville, was elected president of the American Academy of Allergy at its annual meeting held in New York, December 11-12. Dr. John Warrick Thomas, Richmond, was elected a fellow, and Dr. W. Randolph Graham, also of Richmond, a member of the Academy at this meeting.

### **Capt. Hyman Cantor, M.C.,**

Of Petersburg, is now on the Surgical Staff of the intestinal and septic surgery services of the 70th General Hospital, the affiliated unit of the St. Louis University Medical School.

### **Lt. Colonel Charles M. Caravati, M.C.,**

Of Richmond, who has been on duty for sometime at the Percy Jones General Hospital, Battle Creek, Michigan, has been assigned to duty as chief of Medical Service at the Woodrow Wilson General Hospital in Staunton.

### **Petersburg Medical Faculty.**

At the meeting in December, Dr. Henry M. Snead was elected president succeeding Dr. Edith Miller. Dr. William B. McIlwaine and Dr. George H. Reese were named vice-presidents, and Dr. Philip L. Hill was re-elected secretary-treasurer.

### **Dr. I. R. Wagner,**

Who has been a member of the Medical Society of Virginia since 1906 when engaged in private practice in Virginia, retired the middle of October after twenty-seven years service in the Army, U. S. Public Health Service, and Veterans Administration, and is making his home in Charlottesville.



**Dr. Walter J. Otis,**

New Orleans, La., an alumnus of the Medical College of Virginia and member of the Medical Society of Virginia, has recently been re-appointed a member of the Committee on War Psychiatry, and also has been re-appointed Medical Superintendent of the De Paul Sanitarium of New Orleans, a hospital for neuro-psychiatric disorders.

**Interesting Clipping.**

Dr. Holcombe Robertson, Richmond, has sent the following clipping which he found in the advertising column of the CHRISTIAN OBSERVER, published in Louisville and Richmond, for October 28, 1874:

"Dr. Robert G. Cabell offers his professional services to the citizens of Richmond and its vicinity. Office 221 Governor Street, near Broad."

"Dr. John Knox, Residence 1010 East Broad Street, Richmond, Va. Messages left on the slate at the drug store of A. Scott, corner of Broad and twenty-fifth street, will receive prompt attention."

What a change in seventy years!

**Fountain Pen Found.**

Some one registering at the Richmond meeting of the Medical Society of Virginia left a fountain pen at the registration desk. Will be returned to owner upon request to this journal, 1200 East Clay Street, Richmond, 19.

**For Sale.**

One Luxor B. Alpine Lamp in good condition. Shenandoah Valley Bank, Winchester, Virginia. Executor of Estate of Dr. J. E. Harris, deceased. (*Adv.*)

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## Obituaries

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**Dr. Oscar Bruton Darden,**

Well known Richmond physician, died December 10 following a heart attack. He was a native of North Carolina and fifty-three years of age. Dr. Darden graduated from the Medical College of Virginia in 1918, and, after serving an internship at Johnston-

Willis Hospital, was associated with Dr. J. McCaw Tompkins in general practice. He had been a member of the medical staff of Westbrook Sanitarium since 1920. Dr. Darden was active in the work of his local and State medical organizations. He had been a member of the Medical Society of Virginia since 1924 and had recently been appointed chairman of its Mental Hygiene Committee. His wife and three sons survive him.

**Dr. Robert J. Payne,**

Prominent physician, died at his home in Stafford County on December 9. He was seventy-one years of age and a graduate of the former University College of Medicine, Richmond, in 1899. Dr. Payne was formerly a member of the Fredericksburg City Council and served as Mayor from 1932 to 1936. He was a Mason and a member of several other fraternal and civic organizations. Dr. Payne was a former president of the Fredericksburg Medical Association and had been a member of the Medical Society of Virginia for forty-five years. His wife, a daughter and two sons survive him.

**Resolutions on Death of Dr. W. J. Knight.**

At a meeting of the Riverside Hospital Staff, Newport News, the following resolutions were adopted:

Inasmuch as God, in His infinite wisdom and judgment, has seen fit to remove from our midst, our friend and colleague, Doctor W. J. Knight, therefore,

We Resolve that we have lost a very close friend, colleague, and adviser. He was one of the earliest physicians practicing under great difficulties in the early days of this City.

He was also one of the original founders of the present well established Riverside Hospital, and throughout its growth has taken a very keen interest in every activity for the betterment, not only of this Institution, but of the community as a whole.

He gave himself unreservedly in every activity of life.

BE IT RESOLVED that the Riverside Hospital Staff acknowledges its great loss in his passing, and offers to his widow and family its sincere and deep sympathy in their irreplaceable loss.

BE IT FURTHER RESOLVED that these resolutions be spread on the Minutes of this Body, and a copy be sent to the family, and the Medical Society of Virginia.

E. W. BUCKINGHAM, M.D., *Chairman*

J. H. MABRY, M.D.

O. T. AMORY, M.D.



Of the more than a half-million persons in the United States who suffer from epilepsy, only about 50,000 are in public institutions.<sup>1</sup> Thus, about 90 per cent of the therapy of this disease rests on the shoulders of the physician in private practice.

Management of the epileptic in the home demands the use of therapeutic measures which will control seizures effectively, and favorably influence such psychological factors as make for better adjustment of the patient to family life, as well as to his association with others. The objective of the physician is to make it possible for the epileptic, adult or child, to live a normal life with his family.

Dilantin Sodium is a superior anticonvulsant that is relatively free from hypnotic action. It is effective in many cases which fail to respond to bromides or barbiturates. With dosage skilfully adjusted by the physician to the requirements of the individual patient, it provides complete control over seizures in a substantial percentage of cases. In others it lengthens the interval and diminishes the effect of the seizures.

## **DILANTIN SODIUM** Diphenylhydantoin Sodium

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Detroit 32 • Michigan



1. Tracy Putnam: Convulsive Seizures, p. 4, J.B. Lippincott Co., 1943.

# SHOULD VITAMIN D BE GIVEN ONLY TO INFANTS?

VITAMIN D has been so successful in preventing rickets during infancy that there has been little emphasis on continuing its use after the second year.

But now a careful histologic study has been made which reveals a startlingly high incidence of rickets in children 2 to 14 years old. Follis, Jackson, Eliot, and Park\* report that postmortem examination of 230 children of this age group showed the total prevalence of rickets to be 46.5%.

Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

\*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66:1-11, July 1943.

MEAD'S Oleum Percomorphum With Other Fish-Liver Oils and Viosterol is a potent source of vitamins A and D, which is well taken by older children because it can be given in small dosage or capsule form. This ease of administration favors continued year-round use, including periods of illness.

MEAD'S Oleum Percomorphum furnishes 60,000 vitamin A units and 8,500 vitamin D units per gram. Supplied in 10- and 50-cc. bottles and boxes of 48 and 192 capsules. Ethically marketed.

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# Virginia MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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February 1945

# A WOMAN'S PEACE OF MIND

No one understands the complexities of a woman's mind as well as her physician. He is fully aware that the menstrual period may often initiate temporary psychosomatic difficulties, or aggravate existing emotional maladjustments.

Today — with so many exacting demands upon women — any measure which contributes to her greater sense of comfort and well-being merits the physician's special attention.

Perhaps no single measure brings a woman such a welcome sense of physical and mental relief during the menses as the use of TAMPAX, the original vaginal tampon for improved menstrual hygiene.

This is because TAMPAX fits so comfortably in situ... eliminates all external bulkiness... precludes the possibility of exposure of the discharge to odorous decomposition... abolishes vulvar irritation and chafing from perineal pads... and permits freer indulgence in sports and other physical activities.

Results of recent studies<sup>1,2,3</sup> in thousands of cases confirm the fact that TAMPAX meets all the requirements of modern hygiene — providing thoroughly *adequate* and *safe* protection. Equally important (as one gynecologist has stated), with TAMPAX "many patients say they can forget that they are menstruating and so are without the disturbing annoyance they had every time they menstruated."<sup>1</sup>

(1) West. J. Surg., Obst. & Gyn., 51:150, 1943; (2) Clin. Med. & Surg., 46:327, 1939; (3) Am. J. Obst. & Gyn., 46:259, 1943.

## TAMPAX

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## Guest Editorial

### The Shortage of Trained Nurses

ONE hears through the radio and through the press that the army is calling for ten thousand or more trained nurses, and it is presumable that the navy also needs, or will need, more nurses. It is unfortunate that this call probably cannot be met for there is a great civilian shortage of trained nurses as well as in the armed forces.

Considering the problem, three questions arise:

1. Why is there such a shortage?
2. Whose fault is it?
3. What should be done about it?

Question 1. *Why is there such a shortage?*

Briefly, the answer is—

- (a) Because the educational standards have been put too high, both for entrance and training course requirements.
- (b) The three shift special nursing scheme uses up the supply of graduate nurses in an unnecessary way.
- (c) There has been a decided and successful effort through these requirements and the insistence on certain affiliated courses to close up the training schools of small and of special hospitals.

Question 2. *Whose fault is it?*

- (a) It is the fault largely of the nursing organizations themselves which have inclined to suppress the manual and self-sacrificing part of the nursing calling by over-stress of the educational requirements.
- (b) It has been partly the fault of medical colleges and of large general hospitals in encouraging over-educational and entrance requirements.
- (c) It has been the fault of the doctors, schools, hospitals, trained nurses themselves, and legislatures in allowing the shortage situation to develop.

Question 3. *What should be done about it?*

- (a) Make the entrance requirements more reasonable.
- (b) Encourage training in small and special hospitals.
- (c) Cut out unnecessary laboratory study and affiliated courses.
- (d) Consider the reduction of the training course to two years instead of three.
- (e) Establish voluntary post-graduate courses in specialties, and in hospital administration.



- (f) Form a general committee, appointed by the Medical Society of Virginia, with the concurrence of the Governor, to represent public hospitals, special hospitals, small hospitals, doctors' and nurses' organizations, government, state, and municipal administrations, educational, religious, business, women, racial and other factors to consider these things and to formulate means of instituting constructive suggestions and regulations.

REMARKS—

Unless a plan somewhat similar to the foregoing is carried out, we shall face a permanent shortage in all hospitals, military and civil, and in private practice of satisfactorily trained nurses and have to put up as best we may with undergraduates, practical nurses, attendants, irregulars, amateur volunteers, or no one at all.

Recently we have seen in Virginia the closing of the training schools of some useful small and special hospitals, five or six of them either temporarily or permanently in Richmond alone, and the non-opening of one hundred and thirty odd beds in our largest hospital, greatly because of the lack of nurses. If these institutions had been encouraged to function as they formerly did, I doubt that there would be a shortage of nurses.

There have been many instances of individual injustices. I shall only cite two. During the World War I period, we took into our training school (now closed) a very bright girl of eighteen who had not quite finished her second year of high school. She was of good family and character and graduated second in her class in our school of nursing. When she applied to the State Examining Board of Nurses to get her certificate as a graduate nurse, it was denied her and she has never been allowed to practice as a graduate nurse. However, she has made an excellent non-graduate nurse at much less wage than she deserves and is denied work in many hospitals and in her country's service.

The second case is that of a graduate nurse who was registered and who twice volunteered to nurse in the armed services of this war, but both times she tells me she was turned down at the instance of the Red Cross because her nursing education was not up to their standard. However, she has been doing responsible graduate nursing for years and can match wits and abilities with most of them.

Of course, I do not know all the answers but I do know there is a great deal wrong with the nursing situation in Virginia and I believe in the whole country, and that it is not the fault of the average nurse or the average doctor either, but of the self-styled higher-ups. I believe there is a growing need for more nurses and will be, both civilian and military, for many years to come. Virginia may be able to set an example in trained nurse production.

It has been distasteful for me to write this and I only do it from a sense of duty.

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## LOW BACK PAIN WITH SCIATICA

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### INTRODUCTION

The evolution of our present diagnosis and treatment of low back pain with sciatica has covered a period of many years. Sciatica<sup>1</sup> was described by an Italian investigator, Contugno, over a hundred years ago. Dejerine, a French physican, described quite thoroughly our present sciatic syndrome with special attention to the posture of the patient, but he felt that the etiological factor was syphilis.

In 1934 Mixter and Barr<sup>2</sup> emphasized the significance of intraspinal protrusion of the intervertebral disc as an important cause of low back pain

mate of his discomfort and it will vary at different visits.

The disc is usually spoken of as a shock absorber between the bodies of the vertebrae and it also acts as an equalizer of pressure. The histology of the disc lends itself to intraspinal protrusion. It consists of three parts, the vertebral plate on each side, the annulus fibrosis which consists of six to eight layers and surrounds the nucleus pulposus, which is more or less a gelatinous structure possessing the property of fluids. No definite blood supply has been identified to the disc except in very young in-



Fig. A.

and sciatica, and since then the condition has aroused considerable interest. During the past few years a large amount of literature has been written on the subject and the condition has been fairly established as a definite clinical and pathological entity. Deucher and Love,<sup>3</sup> reporting on the pathological studies of a large series of intervertebral discs, indicate the fragments are composed of fibrocartilage, portion of nucleus pulposus, and occasional remnants of the notochord. Several authors have reported a large number of operative cases with a discussion of the subject and a few have reported on follow-up studies.<sup>4-5-6-7</sup>

It is the purpose of this paper to present the follow-up study on 50 cases. This is a small group but it is felt that they may be of value since we have been able to examine them on several occasions over a period of years. The analysis of these cases has been difficult as the result must be measured to a certain extent by the patient's own personal esti-

dividuals; channels can be demonstrated but none with definite epithelial linings. These even disappear in elderly individuals. As to the nerve supply, it is also rather indefinite, but it is felt that there are pain fibers present since one can elicit pain directly over the spinous process occasionally or to either side.

The immediate anatomy<sup>8</sup> involved is clearly shown in Figure A. The ligamentum flava runs between each lamina, blending with the capsule of the articular facets and also running between the pedicle of each vertebra, forming the inferior portion of the foramen for the nerve root. Figure B<sup>8</sup> is a view of the spinal canal from within, showing how the nerve root may be compressed from thickening of the ligamentum flava and herniation of the intervertebral disc.

### SYMPTOMS

The clinical symptoms usually fall in two main groups and depend upon the age of the individual.

The younger age group gives a history of minor injury to the back followed immediately by low back pain and sciatica. There is no previous history of low back pain and the pain in the hip and leg over-shadows the back pain. There may be weakness in an extremity with partial or complete loss of Achilles' reflex and possibly disturbance of skin sensation over part of the foot. X-ray findings do not reveal any abnormality except an unusually straight spine.

While the above is the usual history, the follow-

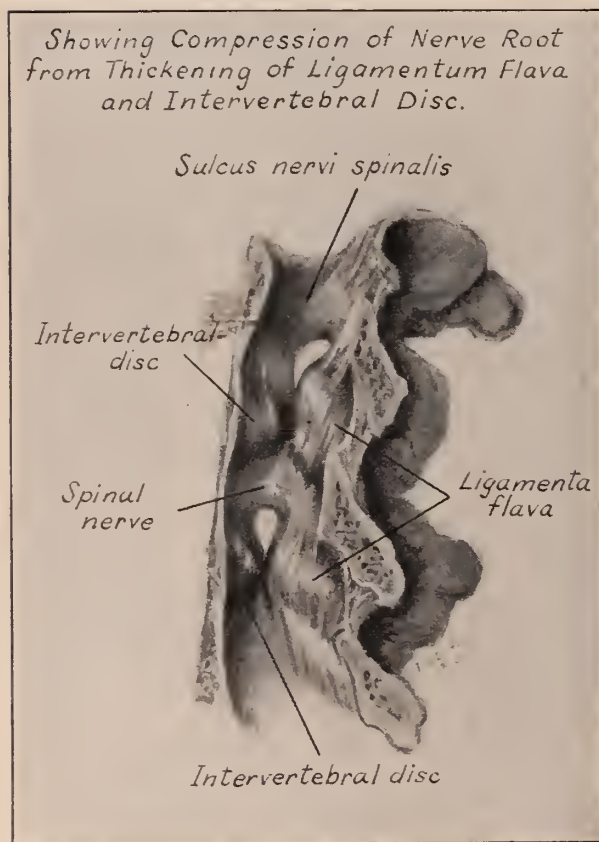


Fig. B.

ing case illustrates an entirely different onset:

*Case Report:* E. W., Merchant Seaman, white, male, age 26 years, occupation Quartermaster. Chief complaint pain in left leg. There was no history of injury. The duration was approximately six months and began with soreness in the right upper thigh posteriorly. This increased to the point where he was unable to bend over forward, straighten his leg out, or even bend his neck forward. After walking a while he complained of numbness in his foot.

Coughing or any straining effort aggravated the pain. The pain was relieved while at rest. Operation was performed 11-5-37 and a disc was removed from the 5th intervertebral space on the right. He was discharged 11-20-37. This patient had some shortening of the right lower extremity and pronation of the foot. This was taken care of by a proper shoe. The patient has been able to follow his regular occupation without any difficulty. He has since had a repair of recurrent inguinal hernia and at the present time is working in the shipyards.

The cases in the older age group usually give a history of having lumbago for years and the sciatica may or may not have come on until in the last few years. Whichever may be the case, the symptoms are of increasing severity over the period of years. In this group careful conservative treatment offers no relief and often the patient becomes financially embarrassed, which may lead to bizarre symptoms hard to evaluate. A large majority of these cases have had practically all types of treatment, such as physiotherapy, manipulation, exercise, application of cast, local injection; a few have had Ober's fasciotomy, and it is surprising the number that have had osteopathic treatment. The x-ray usually reveals arthritic changes in the lumbar spine or sacroiliac joints or some anomalies in the lumbo-sacral region.

*Case Report:* H. E., Public Health Service, white, male, age 48 years, occupation Administrative Assistant. Chief complaint, pain in lower back region which radiated down the right leg. The original trouble began in 1923 without any definite history of injury. The low back pain and sciatica were intermittent since that time but gradually increased in severity. This patient had his teeth pulled, had application of casts, had worn a belt, and had all types of physiotherapy. There was some shortening of the right lower extremity and he wore a lift on the right shoe. He finally resorted to osteopathic treatments. In addition, this patient had mild arthritic changes of the dorsal and lumbar spine, involving the lumbo-sacral joint. Operation was performed 10-13-41. A disc was removed from the 4th intervertebral space on the right. He was discharged 10-28-41. This patient has returned to his usual occupation. His only complaint is slight stiffness of his lower back at times and some numbness of the great toe.



## CLINICAL FINDINGS

The clinical picture of a typical disc case is as follows:

1. Flattening of the lumbar spine.
2. Decreased forward motion of the spine.
3. Tenderness over the lumbo-sacral joint or upper portion of gluteal muscles and sciatic notch.
4. Positive straight leg raising test.
5. Partial or complete loss of Achilles' reflex.
6. Subjective numbness of some part of the lower extremity.
7. Aggravation of pain on coughing, sneezing, or straining at stool.

Unfortunately, we do not always have such a clear cut picture, as we do not always have a typical case of appendicitis. The following case history is illustrative:

*Case Report:* T. W. P., Veteran, white, male, age 37, occupation chauffeur. Chief complaint, pain in legs and back. History dated back 10 to 12 years. He was hospitalized at different times for arthritis and scoliosis of the spine. He complained constantly of backache and a feeling of pins and needles in both feet. He had difficulty in arising from a sitting position. He states that coughing and exercise aggravated the condition. Examination revealed definite rotation of the spine, muscle spasm, lumbo-sacral tenderness, marked limitation of motion in the spine with mild hamstring spasm on each side. This patient had a long period of conservative treatment consisting of casts and braces, as it was thought that his main trouble was purely orthopedic in nature. Operation was performed 3-16-39. Operative findings: Bilateral protrusion of intervertebral disc which had dissected under the posterior ligament, causing marked elevation at the 4th intervertebral space. Discharged 4-7-39. At last examination, January, 1943, patient was working daily in a steel mill.

If the symptoms are severe a marked muscle spasm is noted with homo-lateral or contra-lateral list. Some cases are so marked that the individual cannot stand or walk. Also, when the symptoms are severe, there may be associated weakness of the extremity.

## PATHOLOGY

A definite localized rounded elevated lesion which is easily enucleated is the common finding. The lesion is directly under the nerve root and has a

rubbery feel on palpation. (See Figure 1.)

*Case Report:* J. W., Merchant Seaman, age 40 years, white, male. Chief complaint, low back pain, radiating down his right leg. No history of injury in this case but the symptoms date back over a period of 10 years. He had an Ober's fasciotomy six months before admission with temporary relief. Operation 8-30-37. At operation the pathology was found directly under the nerve root on the right side in the 5th intervertebral space. He was discharged 10-6-37. Examination in January, 1942, revealed that he was working steadily and had no complaint referable to his back or leg. The patient had a partial stomach resection 2 years ago.

The disc may be elevated in the axillary fold between the dura and nerve root as shown in Figure 2. It may be in such a position that it compresses the nerve root in the groove under the facet. The disc already may be enucleated and encysted as in the following case:

*Case Report:* A. S., Veteran, white, male, age 38 years, occupation laborer. Chief complaint, low back pain, radiating down the left leg. Original trouble dated back 4 or 5 years with no history of injury. The pain was worse in sitting position, aggravated on straining. Patient complained of some numbness in his left leg. Present attack had lasted for 4 or 5 months. Examination revealed the following positive findings: Flattening of the lumbar spine, slight list to the left, positive straight leg raising test on the left, complete loss of Achilles' tendon reflex on the left, slight atrophy of the left calf, subjective numbness along the outer surface of the foot. Operation 9-19-40. Operative findings revealed an encysted tumor mass along the nerve root in the 5th intervertebral space. There was a depressed area in the posterior ligament directly below the lesion. Healing was firm with complete bridging of the intervertebral space. The patient was completely recovered on our last examination September, 1943.

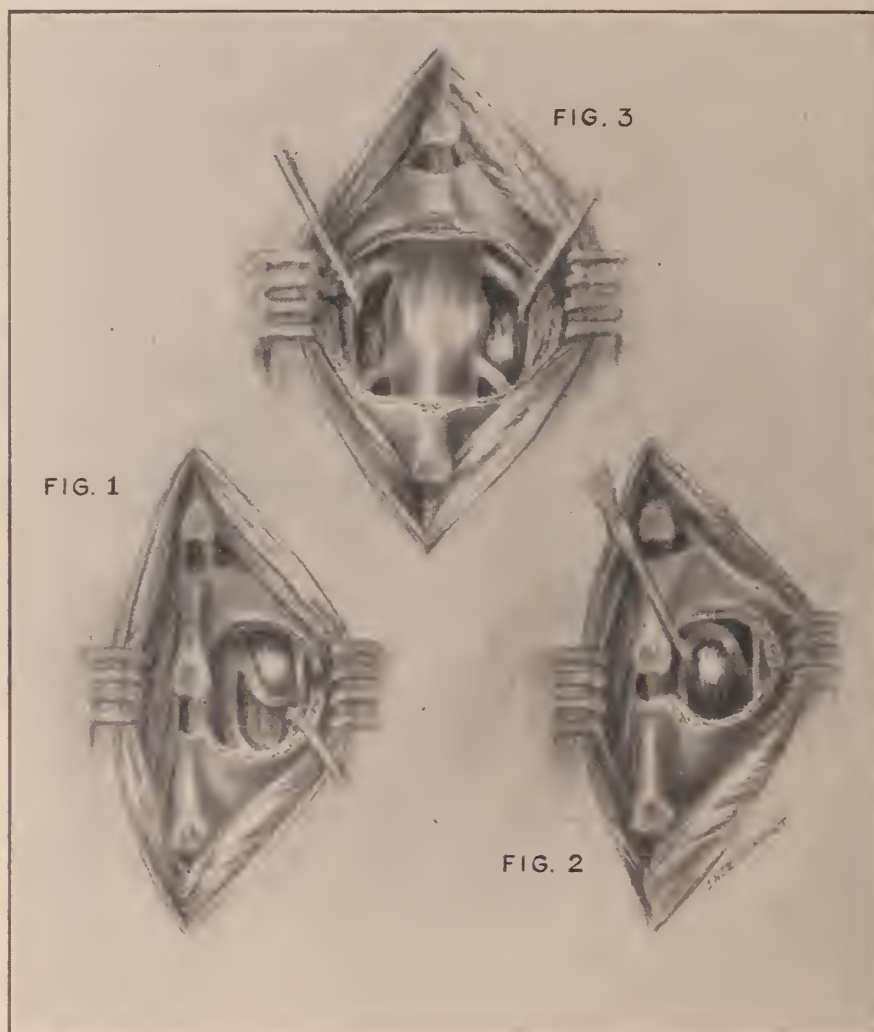
In one instance the disc was calcified. This was the only case in this group associated with an old compression fracture.

*Case Report:* J. E., Works Progress Administration, age 48 years, white, male, occupation general foreman. Chief complaint, low back pain with sharp shooting pains down the right leg. He was injured in April, 1937, when he fell a distance of approximately 6 feet, striking his right hip on a stone. Examination: Mild muscle spasm on the right. Ten-

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derness over lumbo-sacral joint. Limitation of forward bending. No atrophy or disturbance in reflexes. Operation 10-6-37. Operative findings: Calcified defect spreading up along the body of the 4th vertebra and down over the body of the 5th vertebra in the midline. Microscopic sections revealed focal

was affected by change of posture. Examination was essentially negative except for 1 cm. atrophy of the left calf and left thigh. Total protein spinal fluid 150 mgm. X-ray showed moderate arthritis of the lumbo-sacral region and increased lumbo-sacral angle. Operation in August, 1940, revealed a disc



necrosis of intervertebral disc. Discharged 10-31-37. The patient returned to work six months later.

The disc may be centrally located, as was found in the following case:

*Case Report:* C. C., Veteran, age 51 years, white, male, occupation salesman. Symptoms dated from June, 1938, when he was taken with pain in the right hip and thigh. This became progressively worse and about a year later patient developed pain in the left lower extremity. No history of injury. Pain was not aggravated on straining efforts but

centrally located in the 4th intervertebral space. Follow-up August, 1943: Patient was working; had occasional pain in his back at times; no evidence of any sciatica.

There may be thickening of the ligamentum flava with generalized elevation of the posterior ligament and bulging of the annulus fibrosis along one side or across the entire intervertebral space (See Figure 3).

*Case Report:* L. S., white, male, age 37 years, Merchant Seaman. Symptoms began with pain in

his back and down the right leg in 1937, lasting 2 months. Patient had no further trouble until October, 1939; then the pain was continuous, aggravated on coughing and sneezing, and affected by change of posture. No history of injury. Examination: Patient had a marked list to the right and flattening of the lumbar spine. Motion of the spine was limited in all directions. There was  $\frac{1}{4}$  inch atrophy of the mid-thigh. The Achilles' reflex was absent on the right. Total protein spinal fluid 48 mgm. Operation July, 1940. Operative findings: Generalized thickening of annulus fibrosis, posterior ligament, and ligamentum flava 4th intervertebral space. Follow-up July, 1943: No symptoms; patient working daily.

In some of these cases the disc had spread out under the posterior ligament and after proper exposure was fairly easily enucleated. There may be unilateral or bilateral thickening of the ligamentum flava between one or more lamina (See Figure C).<sup>4</sup>

#### THICKENING OF THE LIGAMENTUM FLAVA

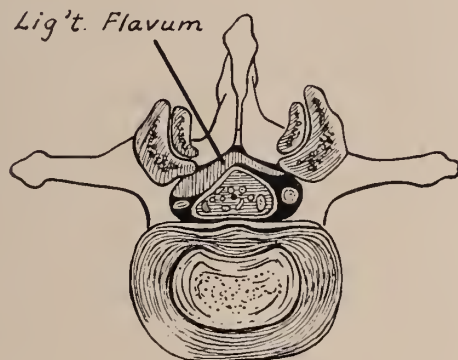


Fig. C.

*Case Report:* J. R. P., Veteran, age 41 years, white, male, occupation salesman. Chief complaint, low back pain radiating down his left leg. His trouble began in 1924 when he hurt his back while lifting a heavy object. Since then he had recurrent attacks following minor back strains. Pain was not aggravated by sneezing or straining but affected by change of posture. Examination was essentially negative in this case except  $\frac{1}{4}$  inch atrophy of the thigh and diminution of the Achilles' tendon reflex. Operation 11-4-38. Operative findings revealed hypertrophied ligamentum flava between the 4th and 5th, and 5th and sacrum, especially on the left side. Bilateral exploration was carried out. Follow-up

May, 1943: Patient has been able to do heavy work and his back has given him very little trouble.

#### FOLLOW-UP

This group of cases represents individuals with varying occupations. They were all males except three, there being one female nurse and two female clerks in the group. The former was a World War I Veteran and the two clerks were Employees' Compensation Commission cases (See Table 1). The merchant seamen were from all departments of personnel on the boat from Captain and Seaman on deck to the engine room. The World War I Veterans consisted of farmers, carpenters, salesman, firemen and steel workers.

TABLE I

#### Class of Beneficiary

Merchant Seamen	13
World War I Veterans	19
Foreign Seaman	1
Public Health Service	2
Coast Guard	2
Employees' Compensation Commission	13

The Public Health Service patients consisted of one Administrative Assistant and one physician. The large majority of the compensation cases were laborers.

#### INJURY

In this group of cases, 32 had a history of injury, or approximately 64 per cent. The injury was quite mild except for 2 cases, one showing a compression fracture of the vertebra and there was some question whether or not there had been a fracture of the vertebral body in the other case. In two cases the x-ray findings suggested rupture of the disc into the cartilaginous plate higher up in the lumbar region. The usual type of injury was lifting in a bent over position or suddenly executing a forceful sitting position. The onset of pain was immediate and completely disabling in some instances and the patient was unable to assume an erect position. In other instances the patients were able to continue on duty with the help of their fellow-workers for several weeks before becoming completely disabled. These individuals were presented on stretchers and were unable to walk. Another group gave a history of temporary relief from severe pain immediately following the injury but the pain returned permanently after a mild back strain.

#### X-RAY STUDIES

The most common x-ray finding was a straight



lumbar spine. In 14 cases some anomaly presented itself, such as spina bifida, sacralization of 5th lumbar, enlargement of 5th lumbar process and 6th lumbar vertebra.

There were 20 cases which showed arthritic changes ranging from mild to rather severe degree. Thirteen of these had some residual pain and stiffness in their backs at times on the follow-up examinations, but they were never disabled for this reason. Two of these cases were disabled at times because of severe low back pain.

Two cases had a decreased lumbo-sacral angle and 7 cases had an increased lumbo-sacral angle. In the former the results were good, while in the latter group 4 cases complained of some residual discomfort in the back at times. There was a decreased lumbo-sacral joint in 1 case, decreased 4th intervertebral space in 2 cases, a compression fracture in 1 case, all of them showing a good result in the follow-up examination. Hypertrophic changes in the spine will result in low back pain and even sciatic pain, but the mere presence of such changes should not be accepted forthwith as the cause of the patient's symptoms. It is not uncommon to see such changes in patients around 50 years of age without symptoms of pain in the back. However, it is reasonable to expect symptoms referable to the back in some of these cases, and in this series 2 cases, marked "Improved", had gross arthritic changes. There was one case with gross arthritic changes and fusion in the lumbo-sacral and sacro-iliac region that obtained a good result. While the presence of an anomaly in the lower spine suggests a congenitally weak back, the majority of the cases in this series obtained a good result.

#### AGE

Nearly all of these patients were over 30 years of age and 60 per cent over 40 years of age (See Table 2). This would indicate that degenerative changes in the ligaments of the spine play a great part in production of the pathology since there is often history of no injury or only a mild injury. This is also the age group in which arthritis of the spine is common.

TABLE II  
Age

20 to 30 years of age	4
30 to 40 years of age	15
40 to 50 years of age	27
50 to 60 years of age	4

From a military standpoint it probably is not feasible for many of these cases to enter the Service or remain in the Service since a large part of them have passed the age for rigorous military training.

#### SYMPTOMS

The large majority of these patients had been suffering with low back pain and sciatica for several years (See Table III). Many of them were former patients whom we had treated intermittently by one method or another over a period of years.

TABLE III  
Duration of Symptoms

6 months to 1 year	10
1 year to 3 years	9
3 years to 5 years	14
5 years to 10 years	12
10 years to 15 years	5

During this time the patients had lost considerable time from work and suffered financial embarrassment. In the future this type of case can be successfully treated, thereby diminishing the loss of manpower and reducing the economic burden.

The common complaint is low back pain, radiating down the leg. In this group nearly all the cases had low back pain before sciatica, but in many of our other cases the pain in the leg has preceded the back pain. The pain is affected by change of posture in contrast to the constant boring pain associated with tumor. It is aggravated on straining, especially when the symptoms are acute. Thirty-two of the cases in this group complained of increased pain on straining. Approximately three-fourths of the cases had some subjective numbness in some part of the extremity, but it could be definitely demonstrated clinically in less than one-third of the cases. When sensory changes are present, even subjectively, it is of help in localization of the lesion. Weakness or loss of strength of the extremity is variable. In many cases this is difficult to evaluate due to the severe pain. The muscles commonly affected are the anterior group in the leg and the adductors of the thigh.

Objectively the loss or diminution of the Achilles' reflex is a common finding. In this group 15 cases had no change in reflexes. In 10 of these cases the lesion was located at the 4th intervertebral space and in 5 cases at the 5th intervertebral space. In approximately one-half of this number the lesion was centrally located. There was some atrophy of the

thigh or calf noted in 18 cases. The following findings were present in all cases: Loss of normal lumbar lordosis; limitation of motion in spine; positive straight leg raising test. In over 50 per cent of the cases tenderness was present over the lumbo-sacral joint or upper portion of the gluteal muscles.

#### PATHOLOGY

The character of the lesion and its relation to the nerve root varied. It was usually found directly under the root but also was found between the nerve root and dura, compressing the nerve root in its sulcus. In some instances the nerve root was displaced medially with difficulty and in these cases a rent in the posterior ligament was already present, the disc fragment being adherent to the nerve root. The disc may be centrally located and easily overlooked without proper exposure. The disc lesion in these cases was easily enucleated when found in the 5th intervertebral space. The lesions in the 4th intervertebral space were not always found free; 7 of them were associated with a posterior bulge and were attached. There were two lesions found completely free and encysted, one in the 4th intervertebral space and one in the 5th intervertebral space. In these cases nothing else could be removed from the intervertebral space after the fragment had been detached. However, we have had 3 cases where the intervertebral space was filled with gelatinous material. Microscopic studies revealed mucoid degeneration of the nucleus pulposus in these cases. The cases listed as hypertrophy of the ligament had an elevation under the nerve root (See Table IV). On removal the microscopic sections revealed only annulus fibrosis and no nucleus pulposus. These cases clinically presented the same findings as the true disc cases. While I have no data to substantiate the belief, it is my feeling that these cases are the ones that may obtain relief from orthopedic measures.

TABLE IV  
Character of Lesion

Discs—5th intervertebral space .....	24
Discs—4th intervertebral space .....	18
(7 of above had generalized posterior bulge)	
Disc—1st lumbar .....	1
Hypertrophy of ligament 4th intervertebral space	
Unilateral .....	2
Bilateral .....	1
Hypertrophy of ligament 4th and 5th intervertebral space .....	4

#### RESULTS

The follow-up study has been carried out over a period of years (See Table V). The cases have all been examined at approximately six month intervals. The symptoms and clinical findings changed very little after the first year, except for improvement in some cases.

Forty-four cases are well and able to work. Eleven of these state when they do heavy work over a period of time they have some stiffness in their backs and occasionally cramping in their legs but they feel that this is nothing more than the average individual would expect. These men have moderate arthritic changes in their spines.

Two compensation cases were classified a complete failure, having a return of their symptoms. One of these cases was re-explored and fusion was done without relief.

TABLE V  
Period of Follow-Up

2 years .....	12
3 years .....	9
4 years .....	10
5 years .....	10
6 years .....	9

In the follow-up examinations we found the Achilles' reflex remained absent or only partially returned in those cases who had changes in the reflex before operation. Where atrophy of the thigh or calf was present before operation, improvement was noted, but atrophy was still present by actual measurement in 50 per cent of the cases. The strength in the extremity returned to normal. The area of disturbed sensation subsided in all cases except in a few instances where there was some residual numbness, mild in character, along the outer side of the foot, the great toe or plantar surface of the foot. There has been no thinning of the disc post-operatively.

The final results in a series of cases will depend somewhat on the number of compensation cases presented, but this does not explain the percentage of partial disabilities or absence of complete relief of pain in all cases. It is in these cases that stabilization of the spine following removal of the lesion is of paramount importance. For this reason, thorough pre-operative study is indicated, especially if there is evidence of hypertrophic skeletal changes or an unstable lumbo-sacral joint. While we perform fusion in only a small percentage of our cases, and

in only one of this group, we feel that 2 of the cases marked improved would have been completely relieved with fusion of the spine since they presented localized hypertrophic skeletal changes and were laborers by occupation. The decision to perform spinal fusion is made from the history, clinical findings roentgenograms and occupation of the individual. If an unstable back or localized hypertrophic skeletal changes can be demonstrated clinically and roentgenographically, if pain in the back is the major factor and can be relieved by immobilization, and if the patient is a laborer, certainly spinal fusion is to be considered at the time of removal of the intervertebral lesion.

#### SUMMARY

A follow-up study of 50 cases has been presented. They have all been examined at intervals over a period of years. The symptoms and clinical findings have been described along with the pathological findings. They do not represent consecutive cases as this has not been possible due to our shifting population.

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#### Some War Activities of the American Red Cross.

The International Red Cross Committee watches over the welfare of war prisoners of all countries that have ratified the convention covering this phase of warfare. The Committee's delegates make periodic visits to prisoner of war camps, inspect housing and food, talk to the prisoners' chosen representatives in privacy, ascertain physical and spiritual needs, and see they are properly cared for.

The Red Cross Blood Donor Service now supplies whole blood to the armed forces in addition to providing for the plasma program. Whole blood is flown to the war theaters, where it is used to supplement plasma transfusions.

To beat the black market in Italy the Red Cross recently shipped 2,500 light bulbs by air and 7,500 by boat for use in its servicemen's clubs. Shipments

of 100 small pianos for Red Cross hospital recreation rooms have also been made to Italy.

Red Cross medical kits for prisoners of war contain standard preparations in quantities sufficient for 100 men for one month.

The American Red Cross has 200 clubmobiles in operation. Of these, 39 are cinemobiles, which bring movies and music to our fighting men in the field.

Three hours after the initial landing on Leyte, P. I., American Red Cross men had established beach-head canteens serving coffee and other refreshments.

Red Cross flight kits are provided wounded men evacuated from the Middle East to hospitals back home. Kits contain games, magazines, candy, and other items.



## THE SUPERVISION OF PNEUMOTHORAX CASES\*

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Before entering into a discussion of the problem of the supervision of pneumothorax cases, I should like to say just a word about the pneumothorax program in Virginia which led to the formation of this Society. When this program was inaugurated, some six years ago, as a means of relieving some of the load on our state sanatoria by releasing patients who were occupying beds there in order to continue pneumothorax treatment, either because they could not afford to pay for it at home or because there were no convenient facilities for obtaining refills, there was some doubt expressed as to whether this ambitious scheme could be successfully carried out. It was thought by some that the supervision and care of these cases was too much a job for the specialist in chest diseases, and that a group of young men without advanced training in chest work would not be able to handle the problem successfully. Experience over the past six years has justified the confidence of those who conceived the idea. The number of cases handled has exceeded the most optimistic speculation. In addition to this, the cases have, for the most part, been handled very well according to all information given me. In fact, so well has the program succeeded that it may well serve as a model for other states who might wish to adopt it. Its success, I believe, is due primarily to two factors: first, the wise and efficient leadership of Dr. E. C. Harper, who has directed it since its inception; second, the cooperation of the staffs of our state sanatoria who have given generously of their time and have gladly made available their knowledge and experience to all of us who asked their help and advice in solving any of our problems. I consider that we are extremely fortunate in this state in the caliber of the men who are carrying on this work in our sanatoria. I should like at this time to acknowledge my debt to them and to express my appreciation for their assistance on numerous occasions.

It is a well-known fact that the advent of collapse therapy in its various forms has revolutionized the treatment of pulmonary tuberculosis. The development of this form of treatment properly belongs to this century, for it was not until 1895 that For-

lanini reported his first case of pulmonary tuberculosis with cavitation successfully treated by this method. The record of progress has been a remarkable one for a scant forty years. It is a fact, not sufficiently appreciated either by medical men or the public, that collapse therapy by means of pneumothorax, operation on the phrenic nerve, thoracoplasty and pneumolysis, have probably done more for suffering humanity in the way of prolonging life and restoring innumerable men and women to health and efficiency who were previously doomed to death or a life of invalidism than most of the other modern medical discoveries combined. By far the vast majority of patients with pulmonary phthisis are fit candidates for some form of collapse therapy at one time or another in the course of their disease. Since we are dealing with artificial pneumothorax in this paper, we are primarily interested in the number of cases suitable for this form of therapy. Taking an average of reports from various parts of the country, this figure, according to Packard, Hayes, and Blanchet, is somewhere in the neighborhood of 40 per cent—a vast number to be considered for one procedure.

The most common indications are progressive disease usually with cavitation, stationary or very slowly progressive cases, profuse or recurrent hemoptysis and fulminating types of pulmonary tuberculosis.

Following the induction of artificial pneumothorax, the maintenance of a satisfactory and effective collapse, the prevention and management of complications and the decision as to when the pneumothorax should be terminated are matters which may tax the judgment and ingenuity of the physician. The latter subject has been adequately covered in another paper and will not be mentioned here. The actual technique of giving refills is a simple matter, but the other points may be far from simple. In giving refills, an 18 gauge, short beveled needle is used to minimize the danger of injury to the lung. After the preliminary cleansing of the skin, a wheal of novocain is placed at the site of injection with a hypodermic needle. The pneumothorax needle is then attached to the syringe and introduced slowly into the pleural cavity. One can usually distinctly

\*Read before the Society of Chest Physicians of Virginia, in Richmond, May 29, 1944.

feel the entrance of the needle point and when, upon drawing back the plunger, air is aspirated into the syringe, the operator knows the pleural space has been reached.

The amount of air to be given at a refill and the interval between refills varies, of course, with the individual patient. Early in the treatment refills may have to be given twice a week and this period is lengthened as the patient "holds" his air better. A healthy pleura absorbs air more quickly than does a diseased or thickened one. I have seen patients with thickened pleurae go for many months without a refill and still retain a considerable collapse. Generally speaking, however, I do not think it is wise to wait for a longer period than four weeks between refills, as complications may result. While many physicians give large quantities of air at a single refill, it is not wise to exceed 500 to 550 cc. at a time. More than that amount produces too rapid compression of the lung and may lead to mediastinal shifting with respiratory embarrassment of the formation of an effusion. If a large quantity is required, it is better to wait a few days, watch the patient's reaction and temperature and fluoroscope him before proceeding further. When a refill of around 200 to 250 cc. of air is sufficient to maintain an adequate collapse, the interval between refills may usually be lengthened with safety.

There are other factors which influence the amount of air which may be necessary. The mobility of the mediastinum is much greater in some individuals than in others. Where this is mobile, it may be difficult to maintain an effective collapse. Where there is extensive pulmonary fibrosis, contraction of the lung and fixation of the mediastinum, as is found after long standing pneumothorax, the intrapleural pressure becomes increasingly negative, and shows greater variation between inspiration and expiration due to the non-yielding lung. A fixed mediastinum and fixed thoracic cage have an important effect upon the intrapleural pressure, each tending to magnify its negative character. When the collapse is slight and the lung freely movable with respiration, great care should be exercised in giving refills to avoid injury to the visceral pleura.

The normal intrapleural pressure is, of course, negative and as air is introduced it approaches zero or atmospheric pressure. It is better, as far as possible, to maintain a pressure slightly on the negative side, or to close with a reading no higher than zero

on expiration. This can be done in most cases of caseo-pneumonic disease which constitute a high percentage of pneumothorax cases. We may speak of this as a collapse or relaxation pneumothorax as contrasted to compression pneumothorax in which positive pressure may have to be used to effectively collapse areas of consolidation or fibroid disease. It has been my experience, however, that the vast majority of cases which I have handled could be very satisfactorily maintained by the use of low intrapleural pressure.

There is also a tendency, especially in inexperienced hands, to collapse the lung too much. Often I have seen cases with what was, for all practical purposes, a complete collapse of the lung. On fluoroscopy all that could be seen would be a small mass about the size of one's fist. While this may, at times, be necessary, it is not in the vast majority of cases. These patients have a tendency to develop troublesome effusions, and present a difficult problem when re-expansion is attempted, for, if such a collapse is maintained indefinitely, the lung will frequently simply not re-expand. The best collapse is the least collapse necessary to control the disease adequately. One will keep out of a good deal of trouble if this rule is followed.

Just a word about so-called "selective pneumothorax". If there are no adhesions, the retractile power of the lung is first exerted; but the area of disease has little or no retractile force and is moved with the surrounding lung tissue undergoing retraction away from the thoracic wall toward the root of the lung. If the lung is allowed to remain collapsed for a considerable period of time, fibrosis within the healing lung will prevent, by its contractile power, the complete re-expansion of the diseased area, and as the pneumothorax becomes less and less through absorption of the air, the normal portion of the lung expands to fill the thoracic cavity and the diseased area remains partially collapsed. Eventually the normal lung tissue becomes hypertrophied and emphysematous, sometimes greatly so, in order to compensate for the loss of volume caused by the diseased area which has not expanded. One lobe may remain permanently collapsed, the other expanding and filling the entire pleural cavity.

It is desirable, of course, to follow the patient carefully by the use of fluoroscopy, preferably at every refill.

Probably the most frequent complication encoun-



tered in the course of pneumothorax therapy is pleuritis. When serous pleuritis occurs, it is first noticed that the pleural pressure is raised with a much smaller amount of air than usual. Careful fluoroscopic control is essential in preventing and managing this complication which is encountered more frequently when too high a degree of collapse is maintained or when the operator allows too much variation in the degree of collapse. Therefore, the optimum amount of collapse for each patient should be determined and maintained as closely as possible. This again illustrates the necessity for fluoroscopy at every refill. This complication may be of the so-called benign type which sometimes occurs early in treatment, causing no symptoms, and disappears quickly. This may be due to the irritant effect of the air injected. Effusions are also less likely to occur on limited disease of low activity. A certain percentage of patients will develop effusions no matter how careful the management, and most pneumothorax patients have had this experience somewhere in the course of their disease, either the benign or the tuberculous form. The usual figure given in collected series runs between 50 and 70 per cent. When the tuberculous form occurs, it should be a warning for caution, since the most probable pathogenesis is the direct extension of an active subpleural focus through an allergic visceral pleura. Tubercles on the visceral pleural have frequently been seen by means of the thoracoscope.

The manner of onset of a serous pleuritis varies with the severity of the infection. Some, as previously mentioned, may occur without symptoms and be discovered only by x-ray. Others may manifest themselves by a slight soreness, or heavy sensation in the chest with or without slight elevation in temperature. Some begin abruptly with high fever, which may persist for several months, and are accompanied by severe symptoms such as chills, headache, chest pain, dyspnea, weakness and weight loss. In these cases the fluid often becomes purulent rapidly and often arises from perforation of the lung.

In these patients the course is variable. The fluid may become stabilized and disappear of its own accord, or it may persist for varying degrees of time. Generally speaking, in those patients with more severe symptoms of onset, the amount of fluid is greater and it is more persistent. As a general rule, the symptoms disappear long before the fluid, which may gradually become seropurulent and then frankly

purulent. Others change more rapidly. This change occurs in from 10 to 20 per cent of mild effusions, most frequently when the initial temperature is high. It is also more likely when the effusion is large. Adhesions are likely to form in sero-fibrinous pleuritis and lead to premature expansion of the lung, and the lung may re-expand considerably under the cover of an effusion, resulting in an obliterative pleuritis. Pre-existent adhesions are also likely to become thickened following an effusion, thus interfering with the success of a pneumolysis which should, if possible, always be performed before an effusion sets in. The pleura is thickened and becomes inelastic, often interfering with the expansion of the lung when it does not lead to premature expansion. When an effusion has become purulent and of long duration and the lung has partially expanded, there often results great retraction of the chest wall and mediastinum, although circulatory symptoms as a result of this deformity are uncommon. Occasionally the pus may be absorbed and it is possible to continue collapse treatment. The occurrence of a serous effusion apparently has no deleterious effect on the mortality rate in pneumothorax cases. There may develop as a result a marked pulmonary fibrosis which prevents the full re-expansion of the lung. The intrapleural pressure here becomes markedly negative and refills may have to be given indefinitely in order to prevent discomfort. Bronchiectasis may also develop in these fibroid lungs.

Symptomatic treatment is indicated at the onset. The fluid should be aspirated when there are symptoms of pressure, in the presence of a large amount of fluid, if there is evidence of adhesions forming and the lung is re-expanding, or if the fluid level has become stabilized and the fluid is showing no tendency to disappear. As a general rule, aspiration should not be performed nor refills attempted during the stage of acute symptoms. One exception is for diagnostic purposes when the symptoms are such as to make it necessary to rule out septic empyema. Sometimes the temperature remains elevated until the fluid has been aspirated, especially in a rapidly forming effusion accompanied by marked general symptoms. With a mild pleuritis, the temperature usually drops in from 5 to 10 days and a refill may be given. Careful manipulation of the degree of collapse at this point has seemed to me at times to aid in reabsorption of the fluid. This has been denied by some far more experienced than myself and



I certainly cannot prove it, but it seems to me worth while. Unexpected re-expansion of the lung can occur, but rarely during the stage of acute pleuritis. If severe symptoms persist it is better to avoid refills and follow a policy of watchful waiting. X-rays may be made with the patient lying on the affected side to determine whether or not re-expansion is taking place. Our primary concern here is to avoid re-expansion.

Moderately large effusions, rising to the 4th or 3rd rib, which become stabilized and show no tendency to re-absorb, should be aspirated. There is frequently a tendency to aspirate too quickly following the formation of an effusion. It is far better to wait a reasonable length of time to see what nature will do on her own, as one has nothing to lose in the absence of symptoms which force withdrawal, and aspiration performed too early may have a definitely deleterious effect on the patient. When a small amount reforms and persists, it may be allowed to remain. There is frequently a short febrile reaction following aspiration. Aspiration may have to be repeated at varying intervals for some months. When rales and breath sounds are again heard at the base of the lung, or if the base has never been well collapsed, fluid should be aspirated because of the tendency of the lung to expand still further and to adhere to the chest wall. This premature expansion, forming an obliterative pleuritis is the "bugbear" of pneumothorax treatment; the lung literally "creeps up" from the base. While this may occur also in the course of a "dry" pleurisy, it is not as common. The rising height of the fluid level may fool one as to the amount of fluid actually present, for, if the base has expanded, the fluid level may be high and yet the amount actually present very small. Often the pleura is so thickened that this is difficult to determine even with x-ray. This fact should be borne in mind when a rising fluid level is encountered. It is best to make a fluoroscopic examination in the horizontal position to determine the base of the fluid pocket.

Pressure symptoms may force early aspiration. A large effusion which prevents refills of air should be removed. The intrapleural pressure may have to be raised to prevent re-expansion of the lung, though it is better to keep it low while the pleura is inflamed. As we have mentioned before, careful fluoroscopic control is essential, for our primary consideration is to prevent re-expansion as long as possible.

There is one important fact to remember, and this is that there is no statistical evidence, to my knowledge, that early aspiration leads to rapid disappearance of the fluid or that it has any effect on the later development of a purulent fluid.

It has been reported that subcutaneous needle track abscesses may occur, especially if aspiration is performed during the febrile period when many tubercle bacilli are present in the fluid, or after pus develops. This has not occurred in my experience.

In performing aspiration, the method we use is by means of a regular short beveled pneumothorax needle, a 20 or 50 cc. syringe and a three way stop cock. The patient is usually seated with his arms folded in front of him on a table, supported by pillows. The point of insertion of the needle is governed by where it is easiest to get into the effusion. We usually go in fairly low in either the anterior or mid-axillary line first, being careful to keep high enough to avoid danger of puncturing the diaphragm. About  $\frac{1}{3}$  to  $\frac{1}{2}$  the volume of fluid withdrawn is replaced by air, this having been done gradually to avoid sudden marked changes in the intrapleural pressure. Connection is easily made to the manometer so that readings may be taken at any time. A "pulling" sensation or desire to cough indicates too low a pressure and is an indication for introduction of more air. By tilting the patient and directing the point of the needle downward toward the end of the operation, nearly all of the fluid can be removed. The patient should lie on the opposite side for several hours after the operation so that the remaining fluid will not bathe the site of the puncture.

In guarding against the development of a pleuritis, the patient should avoid exposure or becoming chilled, especially early in the treatment. Respiratory infections should be avoided as strictly as possible. Too large a needle, too large refills, and sudden increase in pressure should be avoided. In the presence of any temperature elevation it may be well to defer a refill for a few days. The air injected should not be chilled. Observing these safeguards will not, by any means, prevent all effusions, but may quite definitely avoid some needless ones.

As we have mentioned, from 10 to 20 per cent of serous effusions become purulent. These may be mild or severe, become secondarily infected, or originate from a bronchopleural fistula. Statistically, the effectiveness of the collapse seems to have little or

no bearing on the incidence of empyema. The serous effusions may become secondarily infected during a respiratory infection or following intrapleural lysis of adhesions or septic infections or from an infection following thoracoplasty where the pleura has been punctured.

The most common type of empyema is of mild onset in which a serous fluid gradually becomes cloudy and finally frankly purulent. In the ordinary course of events, the effusion has been present for some months before this takes place. The mode of onset is not always a fair index of the severity of the infection, and it is sometimes difficult to determine whether the gravity of the symptoms presented by the patient are due to the empyema or the pulmonary lesions. In the mild cases, the transition to pus may not be recognized clinically but only when aspiration is performed. The purulent effusion frequently lasts until the death of the patient or until the lung is eventually re-expanded. The collapse of the lung is eventually decreased or lost in a large number of these cases. This is not true of those with severe empyema, many of whom die before the degree of collapse can materially change. Not infrequently the lung is so bound down by thickened visceral pleura that it will not expand, or it may partially expand and become converted into a fibrous mass, a condition which may be compatible with health. The chest wall becomes retracted and the mediastinum displaced. Cavities may reopen or become larger, or there may be no harmful action from premature expansion.

The general condition of these patients is usually good, and the amount of fluid is usually not large. Frequent aspiration is seldom necessary, and the indications are much the same as for serous effusions, i. e., pressure symptoms, obliterating pleuritis and failure of absorption to take place. In these cases the intrapleural pressure should usually be kept slightly on the positive side. Aspiration and irrigation with normal saline is said to be beneficial. In my series, which is very small, this has been of dubious value. I am not familiar with oleothorax, though this has been reported to be beneficial; also irrigation with Jessen's solution. I have also never attempted the injection of any antiseptic or irritant, which seems to me a drastic and uncalled for procedure which may produce disastrous results, such as perforation of the lung.

When fibrous clots or very thick pus interfere

with aspiration, a digestive solution has been used (5 per cent pepsin, 0.5 per cent hcl and 0.5 per cent phenol in saline solution, 100 cc. 4-8 hours before aspiration). When formation of pus continues after aspiration, and signs of toxicity are shown, thoracoplasty is indicated. This is especially true where either the cavity is not closed or has re-opened with re-expansion. Generally 12 months is long enough for treatment in mild cases, less in severe, so that the pleura will not have become so thick that it will interfere with a good surgical result. Because of this possibility, it is always better to aspirate in the anterior or mid-axillary lines, and avoid high intrapleural pressure, which may force infected material through the needle puncture. Phrenicotomy may be indicated to reduce the pleural space as much as possible.

Severe tuberculous empyema without the complication of secondary infection comprises a much smaller group of cases, fortunately, than the more benign form. The onset is usually acute, fever is high, toxicity and general symptoms are marked, and the course is usually rapidly downhill to a fatal termination in most cases. These patients are refractory to treatment. Aspiration and irrigation should be tried frequently and early. Some operators insert a catheter low in the axilla for the purpose of continued suction and irrigation, but often pus forms around the tube so that the pleura is not airtight. If the case can be brought under control, thoracoplasty may be performed. Complications, such as bronchopleural and pleurocutaneous fistulae, are apt to occur. The prognosis in these cases is always poor—either at the onset or after they are established.

Severe empyema may become secondarily infected, especially during the course of a general infection such as influenza or tonsillitis or possibly following pneumolysis. It would seem worth while to try therapy with the sulfa drugs or penicillin in controlling the secondary infection. When such infection occurs, at the onset, pulmonary perforation is frequently the source. Irrigation with various antiseptics is commonly used in treatment—gentian violet 1:1,000 to 1:100, azochloramide 1:3,300, hexylresorcinol. Thoracotomy may be indicated if these measures do not succeed, and when the condition persists, thoracoplasty.

We may group together the complications occurring in the course of pneumothorax therapy which are



due to faulty technique or accident, or both. Needle injury to a vessel may produce a hematoma, which causes no trouble except discomfort. Puncture of a small vessel in the lung by injury by the needle point may cause hemoptysis. The visceral pleura may be torn by the point of the needle. These tears usually heal quickly and collapse of the lung is unusual. Even when this occurs, the symptoms are seldom so severe as to necessitate withdrawal of air. Subcutaneous emphysema, caused usually by leakage of air back along the needle track, may cause discomfort, but requires no treatment. Pneumoperitoneum by puncture of the diaphragm by the needle point may occur if the needle is introduced too low.

"Gas reactions" are popularly supposed to be caused either by pleural shock or air embolism. The theory of the former is that of a reflex set up by irritation of the pleura involving the vagus nerve and inhibiting the heart. Few hold this to be tenable as it cannot be produced experimentally and occurs rarely, considering the number of punctures made. The theory of air embolism holds more water, but even here seems to occur only when some insult is offered the pleura or the lung in addition. We have all encountered these reactions and there are many things about them which are difficult to explain on a physiologic basis.

Procaïn poisoning due to sensitivity may occur, but deaths fortunately are rare. The important thing

to remember is that sudden deaths can and do occur during pneumothorax therapy. Therefore, extreme vigilance in technique must never be relaxed—be careful to avoid tearing the visceral pleural, to always have good manometric fluctuation before administering air, to stop immediately with the onset of symptoms, to exercise care in maintaining aseptic technique and to have stimulants always on hand so that reactions may be promptly and vigorously treated.

It is obviously impossible in a paper of this length to discuss in detail all of the problems which may arise in the course of pneumothorax therapy. Nor is it possible, for me at least, to adhere too strictly to the subject of "supervision" without being led astray, as you have doubtless observed. For a surgical procedure with an actual technique as simple as that of administering artificial pneumothorax, the judgment of the operator in the management of these cases is as important as in many complex operative procedures, and therein lies the success or failure of the treatment, and on it often depends the very life of the patient. The ramifications are almost endless, and it is our responsibility to inform ourselves as extensively as we can as to the problems with which we have to deal that we may do our part effectively on controlling pulmonary tuberculosis and restoring our pneumothorax cases to a life of usefulness.

22 Church Street.

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### Combat Pay for Medical Units.

Many will welcome assurance that the War Department is giving its attention to additional recognition for men of the Medical Corps serving with combat units. This is a matter about which the G. I.'s themselves feel strongly. They know that where there is danger, there the medic is also. They know that the call goes out for him the minute the enemy really has the range. He is as essential to victory as is the infantryman, to whom his presence may at any moment mean life rather than death. General Eisenhower has recommended to visiting Congressmen, says a wholly credible report from France, that he be given extra combat pay comparable to that of the combat unit he serves.

Secretary Stimson indicates that the case of the man of the Medical Corps presents a separate problem because of his non-combat status under the Geneva Convention, but separate insignia and a separate pay system would seem to clear that hurdle. The Secretary noted also that more Medical Corps men receive technical ratings, thus boosting average pay, but that doesn't help the medic who hasn't his rating nor compensate the corps generally when it leaves a safe spot for the shooting front. We hope for the sake of G. I.'s, as well as of the men of the Medical Corps themselves, that this particular bit of justice need not be longer delayed.

—*New York Herald Tribune.*



## HEMATOLOGIC MANIFESTATIONS OF HYPERSENSITIVE STATES\*

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In 1905 von Pirquet and Schick<sup>1</sup> in their account of serum sickness described the associated leucopenia and mentioned that at times it was the only observed manifestation of a serum reaction. Since that time attention has been repeatedly directed to changes in the white cells which occur during or after anaphylactic shock. In 1914 Widal, Abrami, Brissaud, and Joltrain<sup>2</sup> described the sharp leucopenia and lowered blood pressure which they observed in connection with anaphylactic shock and which came to be known as the hemoclastic crisis of Widal. Lee and Vincent<sup>3</sup> observed in 1915 during anaphylactic shock in experimental animals that the platelets were diminished in the peripheral blood and tended to clump in internal organs. The increased incidence of profound granulocytopenias reported between 1920 and 1935, which appeared to be directly related to the indiscriminate use of amidopyrine-containing analgesics, served to focus attention on hitherto neglected hematologic responses associated with allergic reactions. However, the bone-marrow depression known to result from exposure to benzene and similar toxic chemicals, together with the frequent inconstant hypoplasia or aplasia found in the bone-marrow of patients dying from agranulocytic angina, led to widespread acceptance of toxic action as the mechanism responsible for that disease.

In 1933 Madison and Squier<sup>4</sup> reported their observations on the etiologic relationship between amidopyrine and granulocytopenia, and shortly afterwards<sup>5</sup> reported recurrent attacks of granulocytopenia reproduced at will by infinitesimal amounts of the drug, thus demonstrating true drug hypersensitivity rather than toxic action as the mechanism involved. Although many subsequent reports of granulocytopenia resulting from drug hypersensitivity confirmed this observation, other reports appeared in which data were insufficient to differentiate the leucopenia from that due to toxic or nutritional bone-marrow depression.

The therapeutic importance of such powerful chemotherapeutic agents as the sulfonamides makes it imperative that their high sensitizing potentialities

be recognized, and that allergic reactions be distinguished sharply from other less explosive and less dangerous manifestations of intolerance. Accordingly, a consideration of hypersensitive reactions as manifested by the circulating blood cells is undertaken.

## ACUTE HEMOLYTIC ANEMIA

Acute Hemolytic anemia was probably first reported by Mackintosh and Cleland<sup>6</sup> in 1902. In 1907 Widal, Abrami, and Brulé<sup>7</sup> accurately described this condition, which they called acquired hemolytic icterus to differentiate it from the previously recognized congenital type of disease. In 1907 Chauffard<sup>8</sup> noted the increased fragility shown by the red cells in salt solution and the tendency to spherocytosis. In 1908 Widal, Abrami, and Brulé<sup>9</sup> reported auto-agglutination of the red cells in acquired hemolytic jaundice. In the same year Chauffard and Troisier<sup>10</sup> found an iso-hemolysin for normal erythrocytes in the serum of a patient with the acute type of acquired hemolytic anemia, and used the term "acute hemolytic icterus" for the disease. In 1925 Lederer<sup>11</sup> reported a group of three cases of acute hemolytic anemia as a new syndrome, with some resulting confusion since "Lederer's anemia" is essentially identical with the acute type of acquired hemolytic anemia. In 1940 Dameshek and Schwartz<sup>12</sup> reviewed the subject of hemolytic icterus with special emphasis on the mechanism involved.

Normally there is a constant breakdown or lysis of old red cells in the body which is constantly compensated by new cell formation. Certain simple chemical substances, such as distilled water or saponin, are well recognized hemolytic agents *in vitro*. Colloidal silicic acid has the ability of altering the cell membrane of erythrocytes so that hemolysis will occur in the presence of complement exactly as it does when the cell is sensitized by immune antibodies (hemolysins). Lytic phenomena may occur, therefore, as a result of simple changes in the cell membrane or as the result of more complex immunologic changes.

Favism provides a striking example of acute hemolytic anemia as the direct result of an allergic reaction to an ingested or inhaled protein. This

\*Delivered as the Alpha Omega Alpha address at the University of Virginia, February 17, 1944.

condition, most frequently reported from Italy, usually has a very acute onset accompanied by chills and fever. At first there is leucopenia followed by leukocytosis with an increase in mononuclear cells. Platelets are likewise frequently greatly diminished at the onset. Hemoglobinuria and icterus follow promptly and there is evidence of rapid destruction of red cells. Luisada<sup>13</sup> describes two chief types of attack: (1) that caused by inhalation, either of the pollen or more rarely of emanations from the leaves or from the seeds during or after cooking; and (2) that caused by ingestion of raw pods, raw fresh seeds, or less frequently from partially or completely cooked fresh or dried seeds. Typical attacks last two to six days, and fatal cases, which occur almost exclusively in children, terminate during the first two days or very rarely after the third day of illness. The phase of hemoglobinemia, and therefore the phase of acute hemolysis, subsides rapidly. Some cases are associated with severe itching of the face and hands or with urticaria, and Parlato<sup>14</sup> has reported associated rhinitis and asthma. Pazzi de Murtas<sup>15</sup> did skin tests in a series of forty-four patients and demonstrated the presence of sensitivity to the fave protein. It is of interest that patients surviving several attacks may develop immunity, or at least sufficient tolerance that subsequent attacks are much milder. An old empiric method of prevention used in Sardinia mentioned by Luisada is based on drinking an infusion of dried fave beans, or rubbing the skin with it.

#### AUTO-AGGLUTININS

Since the demonstration of hemolysins in the blood by Chauffard and his associates, the presence of auto-agglutinins and iso-hemolysins has been reported frequently but by no means constantly in acute hemolytic anemias. The auto-hemolysins demonstrated by means of the Donath-Landsteiner test in paroxysmal cold hemoglobinuria seem to be quite regularly associated with the presence of a positive Wassermann reaction in the blood, and presumably with syphilitic infections. However, auto-agglutinins especially in low titer, are frequently found in the absence of a positive Wassermann and in persons otherwise apparently normal. Recently it has been noted that attacks of atypical pneumonia are so regularly associated with high titers of auto-agglutinins that demonstration of their presence is of diagnostic value. If these cold auto-agglutinins are true immune antibodies, as generally accepted,

it is not improbable that some will be involved in hemolytic processes, as in the Donath-Landsteiner phenomenon.

#### ISO-ANTIBODIES AND ISO-IMMUNIZATION

*Rh Antigen and Hemolytic Reactions.* Although it was very easy for Ehrlich and Morgenroth<sup>16</sup> to produce iso-hemolysins in one goat by injecting it with erythrocytes from another goat, it was found that the anti-serum so produced was only potent against the blood cells of the goat which had furnished the red cells used in immunization, and for certain other goats, but was never hemolytic for the cells of the animal which had produced the anti-serum. Normal iso-hemolysins were recognized and described in 1900 by Landsteiner<sup>17</sup> as occurring in the blood of man. Transfusion reactions thus became understandable as antigen-antibody reactions. However, in spite of careful typing into blood groups, transfusion reactions continued to occur from time to time. Direct cross matching of bloods used for transfusion, in addition to typing, still further reduced the incidence of such reactions. Nevertheless, hemolytic transfusion reactions sometimes occurred when certain individuals were repeatedly transfused from the same donor or even when different donors were used. In 1940 Rh antigen was first described by Landsteiner and Weiner<sup>18</sup> and so named because anti-Rhesus antibodies were found in serum of animals immunized against rhesus blood. Subsequently Levine and his co-workers demonstrated that erythroblastosis foetalis resulted from anti-Rh antibodies which developed in an Rh negative mother and caused agglutination and hemolysis of red cells in the Rh positive fetus. Recognition of the Rh factor has led to adequate explanation of many transfusion reactions which have occurred within accurately typed blood groups. Statistical analysis of random samplings have shown that Rh antigen is present in 85 per cent of the population. It is lacking in the remaining 15 per cent which is, therefore, susceptible to iso-immunization with Rh antigen.

These instances of acute hemolytic anemia suffice to illustrate the mechanism which is fundamentally the same as in bacteriolysis. Hemolytic anemia has been reported in allergic drug reactions, but actual demonstration of the antibody mechanism is much more difficult because the specific causative agents are partial antigens or haptens. Harvey and Janeway<sup>19</sup> reported three cases of hemolytic anemia fol-



lowing the use of sulfanilamide in 1937, and since that time many similar reports have appeared. W. Barry Wood<sup>20</sup> found acute hemolytic anemia in 5 per cent of 522 patients treated with sulfanilamide.

#### NUTRITIONAL ANEMIA AND GRANULOCYTOPENIA

Following the demonstration of the etiologic relationship between amidopyrine and agranulocytic angina reports<sup>21</sup> appeared in which it was demonstrated that long continued administration of amidopyrine caused depression of the bone-marrow and resultant neutropenia. Miller and Rhoads,<sup>22</sup> on the assumption that basically faulty diet might be responsible for the development of amidopyrine granulocytopenia, fed dogs a deficient diet (black tongue diet) and then added amidopyrine in a dosage considered by them inadequate to produce symptoms. In this experiment, anemia rather than leukopenia resulted; and even in dogs fed a normal diet, the addition of amidopyrine produced anemia which was somewhat less severe.

Recent experiments<sup>23</sup> in which animals were fed purified diets plus sulfonamides have shed considerable additional light on nutritional factors in the production of sulfonamide anemia and granulocytopenia, as distinguished from reactions of hypersensitivity. Rats fed a purified diet to which 1 per cent sulfonamide was added developed severe granulocytopenia, anemia, or both. Similar studies<sup>24</sup> showed also that the addition of sulfonamides to purified diets retarded growth in rats, but that the addition of "Folic acid" and Biotin to the diet restored normal growth. "Folic acid" and Biotin likewise were used successfully to prevent and treat the leucopenia and anemia induced by sulfonamides added to purified diets. On the basis of "Folic acid" synthesis, shown to result from stimulation by p-aminobenzoic acid acting on intestinal bacteria of the chick *in vitro*, it has been postulated that interference with this p-aminobenzoic acid stimulus is responsible for the observed dyscrasias when sulfonamides are present.

The fulminating hemolytic anemia or granulocytopenia seen in some allergic drug reactions represents a very different clinical picture, the mechanism of which can best be compared to that of serum disease. Symptoms of hypersensitivity to sulfonamides and to drugs in general are especially apt to appear after administration has been continued from five to ten days. However, when sensitivity is present

from previous administration, the reaction may be accelerated, as in accelerated serum disease, and acute symptoms may appear within minutes or hours following ingestion of the drug. Chills, fever, and general malaise characteristically occur in reactions of drug hypersensitivity, and the symptoms are quite like those seen at the onset of acute hemolytic anemia.

The leucopenia which occurs at the onset of some allergic reactions is so great that cell destruction alone does not satisfactorily account for the rapid change, and there is little doubt but that redistribution of white cells and thrombocytes occurs during the acute reaction. Some leucocytes probably accumulate about the immediate site of the antibody-antigen union whether this be in the gastro-intestinal tract, bronchial mucosa, skin, or elsewhere. The experiments of Abel and Schenck<sup>25</sup> in which reduction of leucocytes occurred in the peripheral blood during and following anaphylactic shock adequately explains part of the leucopenic response. By the use of an ingenious moat they were able to observe the capillaries, venules, and blood cells in rabbits during anaphylactic shock. Arteriolar contraction with obliteration of the lumina and stoppage of the circulation was first observed. This was followed by increased adherence of the leucocytes to the blood vascular endothelium and by leucocytic emigration through the walls of the capillaries and venules in large numbers. Redistribution of white cells undoubtedly plays an important role in the immediate leucopenia observed in allergic reactions and in the Widal hemoclastic crisis. So, by analogy with other allergic phenomena, it is reasonable to suppose that cellular destruction through leucolysins also contributes to the leucopenia or allergic reactions.

In 1935 Vaughan<sup>26</sup> described his use of digestive leucopenia as a diagnostic criterion in food allergy. A similar procedure was used by Squier and Madison<sup>27</sup> in studying patients with purpuras due to food sensitivity, but instead of using acetic-acid diluting fluid in which white cells are relatively stable, acetone-eosin diluting fluid was used. The fragility of the leucocytes in acetone-eosin diluting fluid is increased. Comparative counts made with this and with the usual acetic acid diluent before and after the ingestion of foods have suggested that during an allergic response there is a leucopenia, due not only to redistribution, but also to increased fragility of the white cells. In a random series of pre-ingest-



tion blood counts it was found that the difference between the acetone and acetic white counts progressively increased as the acetic count became higher. Simultaneously acetic and acetone white counts made before and after food ingestion were plotted so that the observed acetone count in each instance was recorded in relation to the corresponding acetic count. Prior to ingestion of test food the acetone counts scattered in the expected fashion about the previously determined average for the random acetone counts. Immediately after the ingestion of foods to which there was a normal increased leucocyte response, the difference between the acetic and acetone counts was less than before ingestion at the corresponding acetic levels. Presumably, therefore, this rise in white count is accompanied by lessened fragility of the leucocytes. For comparison a similar plotting of counts was made before and after the ingestion of foods which induced a leucopenic and presumably allergic type of response. This demonstrated a marked increase in the difference between the acetic and acetone leucocyte counts, at the corresponding acetic white count level. Apparently, therefore, the ingestion of foods causing leucopenia is accompanied by increased fragility of the white cells in the acetone diluting fluid. This suggests a possible correlation to the increased fragility of erythrocytes frequently but not invariably observed in acute hemolytic anemias. In this group it is of interest that the average of the acetone counts before food ingestion corresponded within very narrow limits with the corresponding counts in the random series.

It is not the purpose to consider here the blood response as a diagnostic procedure in food allergy. However, it is of interest that in a food allergy series a marked drop in acetone white cell count occurred in several instances in which the leucocyte drop, with the usual acetic acid diluent, was less than 1000. It may be postulated, therefore, that the acetic count registers fairly accurately the leucocyte changes which result primarily from redistribution, whereas the acetone white count registers in addition the changes due to increased fragility of the leucocyte.

#### THROMBOCYTOPENIA

The diminution in platelets frequently observed in anaphylactic shock, and during the acute allergic reaction of favism has already been mentioned. In

1907 Rufus Cole<sup>28</sup> injected human blood platelets into the marginal ear vein of rabbits and was able to produce a strong agglutinating serum for human platelets. Hemolytic serum produced in a similar manner for human erythrocytes, although of high hemolytic titer, failed to agglutinate platelets. Lee and Robertson<sup>29</sup> injected guinea pigs with antiplatelet serum and were able experimentally to produce in animals a condition clinically comparable to thrombocytopenic purpura. The antiserum so produced had strong specific agglutinating and lytic action on guinea pig platelets but would not occur in the absence of complement. Corresponding normal serum injected in control pigs caused no blood changes. Thrombocytopenic purpura resulting from drug allergy is well recognized. Following Loewy's<sup>30</sup> report of thrombocytopenic purpura from sedormid, in which exacerbations were produced at will by readministration of from  $\frac{1}{2}$  to  $\frac{1}{4}$  grain, many other instances have been recorded. The report of H. H. Huber<sup>31</sup> is of special interest because the reaction occurred in himself and the sequence of symptoms was accurately observed and recorded. One tablet of sedormid was taken at 10 P. M.; at midnight the chill and fever characteristic of an allergic drug reaction occurred, and the blood platelets at that time had dropped to 40,000. Thrombocytopenic purpura alone or in association with granulocytopenia has been reported following administration of a number of other drugs, and recently reports of thrombocytopenic purpura following the use of sulfonamides have appeared with increasing frequency.

Squier and Madison reported thrombocytopenic purpura from allergic reactions to foods in 1937.<sup>32</sup> The identification of reacting foods by others who depended on skin tests or on elimination diets alone as diagnostic procedures has with few exceptions been unsatisfactory and has failed to demonstrate the food etiology.

Brief summaries of three additional cases of thrombocytopenic purpura due to food allergy illustrate platelet depression in hypersensitive reactions. These cases will be reported in detail elsewhere.

The first patient (V.D.) has been observed since 1938 and has been found clinically sensitive by ingestion tests and clinical trial to milk, rye, pork, tomato, coffee, and tea. However, only the ingestion of rye or coffee was associated with a thrombocytopenic response. It is of special interest that although marked thrombocytopenia with a drop in

platelets from 114,000 to 42,000 followed coffee ingestion, normal leucocytosis rather than leucopenia occurred. It is probable, therefore, that something more than redistribution of platelets was involved in the thrombocytopenic response, and that platelet agglutination, lysis, or both, was probably present. A moderate rise in the platelet level followed elimination of rye, and it has been consistently within normal range since coffee was discontinued.

The second patient (M.K.), a sixteen-year-old girl, had eczema in infancy from cow's milk and at twelve had had a series of nose bleeds. In March, 1943, she complained of joint pains, there was severe epistaxis, and typical symptoms and signs of extremely grave thrombocytopenic purpura. Milk was at once eliminated from her diet on the basis of the history of previous intolerance. After the acute attack had subsided, a fall in platelet count from 104,000 to 64,000 following milk ingestion confirmed the suspected milk intolerance. Ingestion tests with wheat, egg, orange, and apple all were normal. An ingestion test with beef, done approximately six weeks after the positive milk response, was followed by moderate leucopenia, but without any accompanying depression of the thrombocyte count. There has been no subsequent recurrence of symptoms.

The third patient (M.E.C.), a twenty-one-year-old woman, gave a history of bruising when ten years old and at twelve had had severe nose bleeds lasting five days. Her history was otherwise unimportant and no allergic symptoms had been observed. In October, 1943, she had profuse menstrual flow which followed within a day or two after a normal menstrual period. Her platelet count at this time was 60,000, and the tourniquet test was strongly positive. After recovery from the acute attack, a four-plus cutaneous reaction to ragweed pollen confirmed her allergic constitution, although there was no suggestion of clinical ragweed sensitivity. An ingestion test with orange, which she had been taking daily, was followed by a fall in the platelet count from 100,000 to 46,000. Wheat ingestion likewise was followed by a fall in platelets from 78,000 to 42,000 and later in the day after a lunch of toasted cheese sandwich and malted milk, the platelet count was found to be 38,000. The reduction in white cells, which paralleled the platelet counts during the first stages of the reaction, had subsided by afternoon although the platelet depression had increased.

#### SUMMARY

Leucopenia characteristically occurs in allergic reactions and is brought about in part by redistribution of the white cells. However, in more pronounced allergic reactions, there is evidence that the fragility of the white cell is increased and that white cell destruction occurs. This mechanism is comparable to the lysis of red cells seen in the hemolytic anemia of favism which is of recognized allergic origin and in the hemolysis which occurs in transfusion reactions which likewise depends on antigen antibody reactions. Transitory thrombocytopenia may result from redistribution of the platelets, but lysis undoubtedly occurs whenever clinical symptoms of thrombocytopenic purpura are present.

Allergic reactions may be manifested in the blood stream by leucopenia, hemolytic anemia, or thrombocytopenia or at times by combinations of these responses. Recognition of the offending agents is often difficult and when foods or drugs are the exciting antigens, skin testing rarely provides significant clues. On the other hand, clinical trial by ingestion of the suspected substance, although exceedingly dangerous and usually inadvisable when drug hypersensitivity is present, does provide clinical evidence that the blood cells are directly involved. A therapeutic approach to successful management is provided through avoidance, when the causative agent has been determined.

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## Report First Successful Operation for Aneurysm of Aorta in Chest.

The first successful operation in which there was removed a section of the thoracic aorta (that portion of the main trunk artery which is located in the chest) on which there was an aneurysm (a sac formed by the dilatation of the walls of an artery), is reported in *The Journal of the American Medical Association* for December 30 by John Alexander, M.D., and Francis X. Byron, M.D., of the University of Michigan Medical School.

"On October 20, 1943, we successfully removed an aneurysm of the thoracic aorta measuring 11 by 8 cm., together with a 7.5 cm. length of the aorta," the two surgeons say. "We are reporting this case because of its historical interest from the physiologic, medical and surgical points of view, since we can find no record in which an aneurysm of the thoracic or abdominal aorta has been successfully removed or in which the thoracic aorta has been successfully ligated."

They believe the aneurysm probably arose in connection with a narrowing or constriction of the aorta (coarctation). The two men warn, however, that "the operation used in our patient has no bearing on the management of aortic aneurysm in general because in him there was an exceptional combination of circumstances that made the operation feasible."

Of primary importance was the fact that the patient, a young man, had a good collateral circulation, so that after the aorta was tied off the supply of blood to the lower part of the body was sustained by means of smaller arteries. These smaller arteries branch off the upper part of the aorta. Ordinarily they do not carry a large volume of blood.

Also contributing to the success of the operation was the good health of the patient, the absence of syphilitic disease of the aorta and the fact that the aneurysm was so located that the aorta could be tied off below the artery leading to the brain and spinal cord.



## THE PSYCHO-ENDOCRINE ORIGIN AND THERAPY OF RECURRENT SPONTANEOUS HEMORRHAGE\*

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Sometime ago I expressed the opinion<sup>1</sup> that spontaneous recurrent hemorrhage may be due to an endocrinopathy of uncertain nature and can be so affected by the administration of available hormones that the bleeding will stop. The idea was derived from the experience of observing this phenomenon in the male and female using estrogenic and gonadotropic hormones, in one case both of them. Since then, through additional opportunities for noticing the reactions of bleeding individuals of both sexes to the estrogenic hormones particularly, I feel that such a conception is on a more tenable basis and, certainly at least, deserving of clinical and laboratory investigation. Furthermore, deeper insight into these reactions persuades me to include the psyche as an inseparable element of this disease.

Spontaneous hemorrhage is frequently encountered and rarely happens just once in the life of a susceptible person. Usually seen in the nose, it may occur from the lips, gums, esophagus, stomach, rectum, kidneys and bladder, and of course the uterus. I have now a patient who bled on the posterior surface of the ear from what appeared to be an eroded vein which later became a hemangioma no larger in diameter than the vein. Perhaps the tumor was being created but the whole process was so rapid and the bleeding so profuse that it constituted a real hemorrhage. In this discussion the disease is considered as a distinct entity, although it may be associated with other conditions such as purpura, hypertension, and the menopause.

### DESCRIPTION OF THE DISEASE

For the purpose of clarity, as well as defining this condition, it may be well to review three of the first cases that came to my attention with the advantage of following them four years. The initial one was a white female, age 48, who, suddenly becoming ill, presented the signs of an internal hemorrhage. The appearance of tarry stools confirmed the impression that the bleeding was from the gastro-intestinal tract. She never had gastro-intestinal disturbances before this and there was now no abdominal dis-

comfort. Five years before she had had an application of radium for severe functional uterine bleeding and the flushes of the succeeding artificial menopause were so pronounced that a large amount of estrogen was required to relieve them. The injections became intolerable after a few years when she tired of and finally refused them and this episode occurred some months later. Her complaints were of severe flushes, weakness, and thirst. I injected estrogen to control the flushes, in addition to other measures, not thinking at the time that the bleeding could be associated with the deprivation of this substance. When the flushes were controlled and it became evident in a few days that the bleeding had ceased, a roentgen study of the stomach was made which revealed a small gastric ulcer near the pylorus, obviously a "silent" ulcer since there were no symptoms. She discontinued the injections in a short period of time and the reappearance of flushes was accompanied by tarry stools. This combination of flushes and tarry stools occurred several times, but following the publication of my paper she would no longer continue this treatment and consulted another physician, to whom she was careful not to mention anything about injections. He had her enter the hospital because of the persistent bleeding. The surgical consultant advised operation but he, also, was not informed of the means by which hemorrhages could be controlled in this patient and partial gastrectomy was done. The specimen contained two ulcer craters. The bleeding ulcer was close to the pylorus and had a small clotted vessel near its edge, while the other was healed. Her convalescence proceeded uneventfully for three weeks when she began to distend and presented the signs of peritonitis. At operation, a piece of omentum, sutured over the anastomosis, was found sloughed off. Leakage followed and she passed away four days afterward. The surgeon was perplexed and unable to explain why the leakage had occurred so much later than the usual time for the appearance of this disaster.

Psychological factors, to be discussed later, in some way are associated with spontaneous bleeding and there is also an alteration in tissue response,

\*Read before the staff of the Petersburg General Hospital, April 13, 1944.

illustrated in this patient, because it has been noted that these patients become more and more intolerant of transfusions.<sup>2</sup> As for this patient, she was emotionally very volatile with a rigid personality, seemed to be under continuous stress and had a tremendous fund of psychic energy. These characteristics are pointed out since they appeared to some degree, with one or another predominating, in all of the patients above forty years of age and in most of the children.

The second case to be reviewed is that of a white woman, age 54, who was bleeding from the lip. The menopause had been completed but severe headaches with flushes every four to six weeks remained. When first seen she presented an unusual spectacle as her head and neck were engorged with blood to such an extent that she was cyanotic. The veins of her face were bulging and one on the lower lip, having eroded through the epithelium, was bleeding profusely. It was obvious that suturing this aperture would merely produce two other bleeding points, and a mucosa clamp applied across the opening was effective but caused too much discomfort. Then it occurred to me that this whole syndrome could be an exaggeration of the familiar menopausal flushes and she was given 10,000 units of estrogen. It was astonishing with what rapidity the engorgement subsided, bleeding stopped, and every symptom disappeared. Estrogen was administered during several months and there was no recurrence of the hemorrhage. This patient has had no more difficulty with bleeding, but has not been well as she is easily disturbed and depressed along with considerable trouble with sleeping, suffers periods of nervous tension, and has mucous colitis and vascular hypertension. Here, again, are pronounced emotional factors in an individual who has had a spontaneous hemorrhage. If one accepts the hypothesis of the bleeding, in this instance, to be part of the menopausal syndrome, then the assumption that the hemorrhage is of endocrine origin is justified by the fact the menopause, itself, is the result of an endocrine change and in this case responded to hormonal therapy.

The third case is that of a white, eighteen year old boy, who sustained an irregular laceration about five inches long on the lateral aspect of his right leg. It had been taken care of elsewhere, but about twelve hours later I was called to his house to fix the dressing more firmly in place and arrange for further treatment. Although not in pain, it was necessary to give him a sedative because he was so

perturbed and agitated. The wound apparently had been adequately treated, the edges neatly and accurately sutured and he was to return eight days later for the removal of the sutures. On the afternoon of the eighth day, a few hours before the time to come to my office, he felt as if something had let go in his leg and it became swollen and extremely uncomfortable. I saw him at home where he was excited, restless, thirsty and in extreme pain; the leg below the dressing was edematous and the bandage, which previously had been comfortable, was now very tight. On taking off the dressing, bright red blood could be seen between the skin sutures. These were quickly removed and the wound gaped open, but after emptying the cavity of blood and clots I could find no bleeding points. The hemorrhage seemed to be a welling of blood from a surface of muscle and the whole area was oozing uniformly. Hasty investigation revealed that the laceration had been through the skin, subcutaneous fat and the fascia of the leg exposing the underlying muscle, and the force of the hemorrhage had torn apart all the deep sutures, putting a heavy strain on those in the skin. A tight pack was placed in the wound and the patient sent to the hospital where he was given enough morphine to keep him quiet, intravenous fluids and heat to the leg which was elevated slightly. A few hours after admission the hemoglobin was 62 per cent, red cell count 3,100,000 and the bleeding and clotting time normal. Moderate oozing continued, but as the pack was tightly bandaged in place I felt the situation was well controlled. Nevertheless, two nights later, profuse bleeding through the pack suddenly began and an interne opened the wound, applied another pack with epinephrine and injected vitamin K. He, too, thought the hemorrhage was controlled, but a few hours later oozing was still present and apparently increasing, although the blood was clotting.

Here was a predicament which did not react to the customary procedures. Analysis of the situation disclosed there were no single or multiple bleeding vessels, a muscle surface was oozing, and that while the blood would clot, the clot was ineffectual. During puberty he had had several bleeding spells from the nose. Experience with an analogous but not similar situation is reported in my first paper and there have been two others since then. These were cases of post-tonsillectomy hemorrhage starting seven days after the operation when bleeding, from the



muscle surface exposed during the dissection, could not be controlled by ligating bleeding points, but did respond to estrogen therapy. Since this patient, therefore, had a spontaneous hemorrhage 5,000 units of estrogenic substance was given. In thirty minutes the oozing stopped and the packs were removed. Three days later another hemorrhage occurred which quickly responded to the same therapy, without packing the wound, and healing then proceeded normally.

#### CHARACTERISTICS OF THE BLEEDER

These patients exemplify three characteristics that have been universal in all the cases of spontaneous hemorrhage under my observation: first, the condition occurred in tense, so-called nervous individuals; second, the bleeding is compulsive in nature and seems to be an effort on the part of the whole organism to relieve itself of some burden; and, third, its course is profoundly curtailed by the administration of estrogen.

The type of person capable of bleeding is one having the capacity for emotional storms under virtually continuous emotional hypertension. This association has impressed me so forcibly it inspires the belief that spontaneous hemorrhage may be one of the psychosomatic phenomena now becoming prominent in medical reasoning. The children presented problems, such as enuresis, poor eating habits, environmental conflicts, unrelaxed attitudes and over-sensitiveness. The adults, especially men over 45, were intense individuals, irritable, some over-conscientious and over-earnest, poor sleepers, usually falling asleep easily and awakening about three or four o'clock in the morning, constantly seeking somatic satisfaction in excessive smoking, drinking or eating and having a tremendous amount of dynamic energy which was usually misdirected. Frequently the history included nose bleeding during puberty, which confirms, in my opinion, the existence of emotional stress throughout their whole life. The part heredity might play in an extremely emotional life is difficult to separate from the domestic background, just as tuberculosis is not inherited unless one persists in staying in tubercular surroundings.

From this description one is led to speculate on the theory that spontaneous bleeding in some persons may have a mechanism which in others produces vomiting, headaches and migraine, diarrhea, gastric disturbances and pylorospasm, anginal attacks and vascular spasms, and chronic fatigue. These are

now thought of as the end result of reaction patterns involving tension, conflicts and stress, and unless relieved by adequate psychotherapy can become syndromes severe enough to be disabling or even cause death. The idea that the endocrine system, as well as any other, can be predominantly affected in psychoneurotic patterns is gradually penetrating medical thought to such an extent that it may well prove a medium through which emotional drives perpetrate somatic effects.

The nebulous characteristic that bleeding of this nature is an effort of the organism to relieve itself of a burden, is purely an impression arising out of the procession of events in a typical episode of which bleeding is the climax. First, there is some restlessness with a quickening in the tempo of cerebral and motor activities, then a feeling of tension and turbulence, a sensation of imminent internal explosion, which, converging towards the brain, resolves into a throbbing fullness of the whole head. The face is flushed, the skin warm and sometimes the veins are distended. Bleeding from either side of the nose may come slowly or with a gush followed by the alarm and panic such a scene imposes upon an already excited individual. In due course the bleeding stops, often of its own accord, and then frequently the patient remarks that he feels much better, especially about the head, than he did long before the bleeding ever started. This sequence can be of short duration or the preliminary complex occupy several days, mounting in intensity until the bleeding starts. The majority of patients will commence their history of the attack at the time of bleeding. Many will describe the sensation of fullness in the head but it will require careful questioning to draw out the full story.

In contrast with all this, nose bleeding is considered by many as being of minor importance and just something of a nuisance. That it can be something more than an annoying incident is illustrated by the case of a white male, age 60, who was admitted to the hospital for severe epistaxis of two days' duration. He had had many bleeding attacks, but this one was more severe than any other. Bleeding from the right side of the nose continued in the hospital for three days despite every effort, including ligation of the right facial artery, to stop it and the patient, becoming weaker and very difficult to control, died five days after admission. But right up to a few minutes before he passed away the face was



flushed, veins prominent and the pulse full and bounding. The only significant finding was the blood platelet count of 52,000, done 48 hours before he expired and he was thought to have thrombocytopenic purpura. Splenectomy should have been the treatment of choice but the decision to operate was too long delayed. Since then one patient of this series, bleeding just as severely on each occasion, was admitted to the hospital twice. Estrogen therapy quickly controlled the bleeding and it is regrettable that blood platelet studies were not done.

#### EFFECTS OF ESTROGEN THERAPY

This series consists of 49 patients who had 73 bleeding episodes, five of which were of sufficient gravity to require hospitalization. Thirty-five were episodes of epistaxis occurring in 21 children and adolescents up to 19 years of age, and the remainder were in adults from 40 to 65 years old. It is intriguing that there were no cases between the ages of 19 and 40 but I have omitted many instances of uterine bleeding, usually attributed to atrophic or hypertrophic endometrium, which could still be secondary to an upset endocrine balance evolving from emotional intensities. Of the adults 20 were men and 8 were women who had 38 bleeding attacks, the majority of which were from the nose. Response to estrogen therapy was adequate in every case. Bleeding stopped within 30 to 90 minutes without any local treatment in the nose or elsewhere. Bleeding from the tonsil fossae ceased within the same limit of time and in two cases of idiopathic hematuria three hours were required. Occasionally bleeding would start again about eight to ten hours after the initial dose of estrogen had been given, and this I interpreted as an overwhelming surge in the endocrine balance that the administered quantity of estrogen was unable to meet. Children and adolescents were given 2,000 to 5,000 units and adults 10,000 or the equivalent of estrogenic compounds, regardless of sex. It is possible that these dosages can be measurably increased because, clinically, I have never noted any toxic effects. A valuable accession of this therapy has been the complete elimination of bleeding incidents in some of the patients who had had them for several years. Estrogen was given only at the time the patient presented himself bleeding and was not used in the interim between attacks. Rarely more than one injection was necessary.

In evaluating the results of estrogenic therapy one is confronted by the fact that spontaneous hemorrhage frequently subsides without any treatment. Some contend that the bleeding should not be stopped at all, but the notion that it acts as a safety valve for the vascular system under stress, as in hypertension for example, has always struck me as being an absurd rationalization, since blood flowing of its own accord and the actual removal of blood are not the same thing and do not accomplish the same purpose. The former is self originating and is found in children and adults with all degrees of vascular tension. Estrogen, from my experience, exerts its influence in the emotional field, as well as the vascular, through some alteration of the endocrine state of the moment and this takes place in the male just as much as it does in the female. What it acts upon first, I have been unable to determine; my impression is a simultaneous amelioration of both the hemorrhage and the state of tension occur without the former being responsible for the latter.

The recovery to a considerable degree of emotional and mental stability and the development of a gratifying sensation of well-being has been a consistent accompaniment of estrogenic therapy in the patients of this series. Walker<sup>3</sup> points out that it is difficult to distinguish between the psychotherapeutic and pharmacodynamic properties of the sex hormones, and later in this article I digress to elaborate on the relationship between them which enlarges on the difficulties of making this distinction.

According to the findings of Frank<sup>4</sup> both sexes require androgens and estrogens and perhaps it would be better to use a combination of estrogens and androgens than either by itself but for the possibility that these hormones may not be synergists. Karnaky,<sup>5</sup> discussing a theory for the cause of menstruation and uterine bleeding, mentions that estrogen is excreted excessively when a woman is given testosterone. From these two statements it may be a reasonable postulate that there is a total threshold for androgens plus estrogens and the administration of one may increase the excretion of the other or perhaps correct a pre-existing imbalance between them. Greenblatt and Torpin<sup>6</sup> experienced the clinical application of this in the treatment of pre-menstrual tension by determining which sex hormone to use through endometrial biopsy. Karnaky states also there is a blood estrogen level, that he terms the bleeding level, above or below which uterine

bleeding will occur and the estrogen content of the blood can be manipulated to promote or hinder such bleeding.

#### RATIONALE OF HORMONE THERAPY

In women uterine bleeding, in itself a form of spontaneous hemorrhage, and uncomfortable breasts are considered normal incidents of the menstrual cycle as well as irritability, depression and other but happier variations of mood that accompany oscillations of the endocrine components of the cycle. The impact of environmental circumstances on the personality, however, can so impress the mood that alterations in the sequence even to omission of bleeding may follow. This indicates that just as variations in the endocrine state can affect emotion, so can emotion reverse the process and influence the endocrine status. The ultimate outcome is probably an eventual equilibrium, established between the two forces, from which the symptoms and signs emanate.

That a mechanism capable of producing bleeding in the male can exist may be derived from the andro-gynic conception of the organization of the animal kingdom. Draper<sup>7</sup> refers to the remarkable circumstance of maleness within the female and femaleness within the male, and Frank<sup>8</sup> states that excretion of the sexually opposite hormones is common to both sexes: the daily excretion being 63 to 68 units of androgens for men and 42 to 56 units for women, and 9 to 12 units of estrogens for men and 18 to 36 units for women. In addition, there seems to be a mysterious source outside of the gonads because he found there is an excretion of estrogen from both the castrated and post-menopausal female. Lacquer and DeJongh<sup>9</sup> demonstrated the presence of estrogen in the human testes, and Cunningham, May and Gordon<sup>10</sup> discovered it also in the testes of the bull and other large animals. Since estrogen plays such an important role in the bleeding and emotional life of the female it is more than likely that it has its counterpart in the emotional life of the male and possibly in the hemorrhagic episodes so common to him also.

Concrete information on the results of the interplay between the psyche and the endocrine system is so limited that the only resource at present for determining what is happening lies in such a labyrinth of imaginative conjecture that extrication is difficult if not impossible. It is to such fanciful deductions that Grollman<sup>11</sup> attaches the term "ob-

scurantism". One does not have to be spiritually minded to realize that in any living collection of protoplasm the sum of all its parts is not equal to the whole, and fanciful deduction has, on many occasions, been a means for exploration which discovers eventually what does constitute the whole.

The psychopathological manifestations of a neurosis in any individual depends upon the manner it projects itself in that person. As the process goes forward through childhood and early youth, the pattern for discomfort and variations in mood becomes firmly fixed and more and more easily initiated until later in life it is almost habit in character. Like certain tics and mannerisms they finally require little or only feeble stimulation to initiate them and thus a mood with its associated despair, phantasy and unrealistic outlook or the somatic complex peculiar to the patient comes in existence. Into this the endocrine system becomes entangled.

To attach all these phenomena to psychological factors alone is, I believe, an error. That its roots are in faulty psychological development, immaturity, inadequacy and unhealthy attitudes may be true, but when seen in the full blown state in the adult, it is a combination of psychological and endocrine vectors, the latter stimulated by the former and between them creating a vicious cycle. Judging from the reactions to hormone therapy, the syndrome once started, depends for its maintenance upon a persistent endocrine imbalance. This persistent endocrine imbalance may be due to the comparative inefficiency of the whole organism to dispose of a faulty endocrine status originated by the emotions. An example of this may be found in the order of incidents accompanying fright. Whatever the reason for it, sudden fear produces a complex including an increase in tone of every muscle of the body, pounding of the heart, blanching of the skin and alertness, and also attended with an abrupt overthrow of the hormone balance by the quick energizing of the endocrine glands. But when every reason for fear has been completely dissipated and totally accepted, the organism requires many hours and sometimes days to return to its previous state of tranquility. Thus a disturbed situation, quickly and capably created, is not as adequately dispersed and requires much time for its dissolution.

In the therapy, it follows that this cycle must be interrupted through either of two avenues of approach, one psychological and the other by the endo-



crine route, but preferably both. The psychological route has received by far the most attention and much progress has been made. That other means can be useful and sometimes produce much quicker results is seen in the growth of fever, drug and shock therapy for certain varieties of the psychoses and neuroses. These, perhaps, serve the purpose of violently interrupting the psyche in its more morbid states and permitting new alignments of emotional and intellectual patterns.

The endocrine system also may be approached to do its part in altering the individual. If one adheres to the theory that the hormones have a role in a neuroses it represents a status which, for the time being, creates a degree of discomfort in the patient. To change this something must either be added or taken away, and progress in this direction is being made through the estrogen and androgen therapy of some of the cardiovascular diseases, especially angina pectoris and hypertension.<sup>12</sup> Because of its quieting effect I have given estrogen to four men who were agitated and introspectively excited but had no bleeding or psychosomatic symptoms and found that they became so much more accessible mentally, that its use may prove of considerable value as a prelude to psychotherapy. All four volunteered the statement that they slept unusually well the night after receiving the injections even though it was given in the forenoon. This remark, as well as others, such as lessened desire for smoking and drinking, was made without suggestion from me as care was taken to avoid telling them what they were receiving and why. Under my treatment now are two men with peptic ulcer who have improved remarkably through estrogenic therapy accompanied by careful attention to the production of physical and especially mental relaxation and without diets.

This would imply that if the person affected retained enough sense of reality to distinguish between the two, he would observe that the sensations of hyperemotionalism arrive first: the feeling of heaviness, globus hystericus, restlessness, tenseness or perhaps excitement and elation, all followed by the kaleidoscopic and repetitious ideation which to him is the reason for his feeling and conducting himself as he does. Could the acceptance of the separation of these two parts of the mood be eventually accomplished and the realization that the cart is being put before the horse be achieved, it may be a long step towards successful therapy. It is for this

purpose that hormones may be of value because of the common observation in the many conditions for which sex hormones are used, of the evolution, sometimes dramatic and startling, of an improvement in the mental state, much different from the changes produced by any other drug. This has been noticed so often that it can no longer be explained by coincidence or suggestion.

Treatment of this type should not be used alone or indiscriminately and only with a full knowledge of the therapist's goal along with his ability to achieve it. Its limitations should be realized for it could easily descend into the realm of charlatanism as a panacea for neurogenic or bleeding diseases. The major criterions for its employment should be a searching examination for the presence of an underlying psychoneurosis, determination of the flexibility of the personality, the somatic effects of emotional hypertension and the probable relation of the presenting symptoms to deprivation of the sex hormones.

I have been unable to find any record of the effect of estrogen on the male except for its use in prostatic malignancy. It appears that its analogue, testosterone propionate, has been favored for clinical study in the female as well as the male and probably with good reason. It may be that androgens may have the same or better therapeutic value in the conditions under discussion but I have had no experience with them. The profound effect of estrogens and androgens upon involutional melancholia and menopausal syndrome in the female is well known, and, as I have indicated there may be instances in which estrogens, as well as androgens, will prove useful in analogous situations in the male.

#### PATHOLOGY

In the nose the blood is generally attributed to be coming from an open vein on the septum. Why a vessel should open in the septum or anywhere else by itself without external attack is not known. With purpuric states there is a concomitant permeability in the capillaries and an increase in their fragility, and Soskin<sup>15</sup> showed that capillaries over the entire body are affected during menstruation. The latter observation can be applied to the larger vessels too, as it is a common experience for persons with varicose veins to complain more about them during the bleeding period than at any other part of the cycle. Moreover, at this time, these veins become much



more tender, dilated and sometimes have the semblance of being inflamed. Any attempt to integrate the bleeding concept with a change in the structure of the capillaries is confused by the impression that the hemorrhage is an active one and not a passive outpouring of blood, escaping because of the fragility or elasticity of capillary walls.

Opportunities for accurately observing what transpires at the bleeding site naturally are rare since the hemorrhage is sudden and usually from places that are hidden from view or, as in epistaxis, are obscured by the blood itself. Only two such chances, already referred to, were presented in this series. These were the patients bleeding from the lip and the ear but the pre-hemorrhagic state at the bleeding point was not seen and specimens could not be removed for examination.

In the review of these two cases the phrases "eroded vein" and "hemangioma no larger in diameter than the vein" were used. These describe the bleeding sites as viewed through a five power binocular. The blood was not coming from a crack or tear but through an elliptical aperture created in the vein that appeared to be as large in its short axis as the diameter of the vein. Around its edge the intima was extruded and there was a piling up of tissue that gave the hemangiomatous or proliferous appearance. The whole picture suggested these sites were selected during the pre-hemorrhagic period in the same manner as a peptic ulcer area is projected before the ulcer itself comes into existence. When the bleeding stopped, even though the holes were still open, healing proceeded rapidly, leaving hardly a trace by which the location could be recognized.

As for the blood itself, reduction in number of platelets had been the only finding thought to be significant in purpuric conditions. Yet this is not constant and platelet counts in some of the recent cases were well within normal limits. Clotting of the blood is modified sometimes at the point where its retraction starts and goes little beyond this stage. I am making some studies of the effect of estrogen on the blood platelet count, and while, so far, these are not conclusive, there is evidence that the platelets are increased following the administration of estrogen, especially in plethoric individuals.

Changes in the blood arising out of emotional states are not pronounced but that they do take place cannot be denied. Hyperglycemia is the most fa-

miliar and explicable, but a demonstration that the cellular components are changed has been made by Milhorat, Small and Diethelm<sup>16</sup> who studied the effect of emotional disorders on the leukocytes. They came to the conclusion that leukocytosis is of frequent occurrence in emotional disorders, there is no relation between the number of white blood cells and the specific psychiatric disease, and the degree of leukocytosis was often related to the intensity of the psychopathologic emotion. This relation was consistent in the same subject. They believe the source of the leukocytes is from reservoirs or pools but have no definite idea where these are located. This shows the far reaching consequences of the power of fluctuating increased emotional tone, and indicates, that from the myriad facets of the make-up of man, an infinite number of every conceivable combination of psychosomatic entities is possible, including the particular type of personality associated with plethoric persons or those having the capacity for bleeding spontaneously.

#### CONCLUSIONS

1. Recurrent spontaneous hemorrhage is a disease entity in itself.
2. It is a psycho-endocrine phenomenon with a mechanism similar to psychosomatic conditions.
3. A particular type of personality seems to be associated with this disease.
4. Estrogenic substances stop the bleeding in both male and female and it is possible that androgens will serve the same purpose.
5. Their effects may be exerted on the vascular system directly, but influence the psyche and endocrine system as well.
6. The pathological manifestations of the disease do not appear to be related to any known changes in the blood or vascular system.
7. There is the possibility that not only a total threshold for the sex hormones may exist but also an imbalance between them.
8. The clinical manifestations of deprivation of these substances or of an imbalance between them are more clearly seen in the vascular system, sex organs and the psyche but may have far reaching influences which are, as yet, not understood.

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I wish to express my appreciation to Drs. C. S. Dodd, J. E. Hamner, and D. D. Willcox, rhinologists, for referring most of the cases of epistaxis to me.

18 Liberty Street.

### Army's Plastic Eye.

A new plastic eye is being made by the Army which is lighter and more durable than glass and can be tinted to duplicate the appearance of the natural eye and fitted to provide as much motility as possible, thereby avoiding the appearance of staring.

First step in making the eye is to paint the "iris"—a thin celluloid disc, only one-ten-thousandth of an inch thick. The "iris" is then embedded in a tiny plastic lens of acralain—a plastic that has been used in dentistry for the last ten years.

The impression of the patient's eye socket is made with a new type compound, an alignate plastic, that is chemo-setting. This, mixed with water to make a paste, is injected with a syringe under the eyelid at body temperature without causing pain or discomfort. It sets to a rubber-like consistency in five minutes and is removed painlessly, giving a permanent record of every tissue contour within the socket. A plaster cast is then made from this replica and used to mold a wax model of the eyeball. The iris button is fitted into the wax and the whole unit is then fitted to the patient. The body temperature

melts the wax slightly to produce an even better fit.

A second cast is then made from this wax replica, the wax is melted away and the cavity filled with acrylic resin, tinted the shade of the patient's natural eyeball. This is baked for an hour under a half ton of pressure. When it comes from the cast it has on its front surface the tiny disc of the iris. It is then polished and the "veins" are applied—tiny rayon fibres, an innovation by Captain Don Cash of Beaumont General Hospital, El Paso, Texas.

As a final step, the whole eye is dipped in a clear plastic solution which produces a gleaming coating similar to the layer of liquid covering the natural eye.

This plastic eye is so durable it can be dropped on the floor and stepped on without injury.

Credit for developing the eye goes to three dental officers: Captain Stanley F. Erpf, Major Milton S. Wirtz and Major Victor H. Dietz who were working independently before they were brought together at Valley Forge General Hospital to found the artificial eye laboratory. Technicians are now being trained within thirty days to make these eyes.

## THE MURRAY-WAGNER-DINGELL BILL. H. R. 2861.\*

HENRY CLAY SMITH, M.D.,  
Boyce, Virginia

As I read the reports of the National Physicians Committee on this Bill they gave me the impression that it only affected the American physicians and our patient-physician relationship; but an examination of the Bill surprised me and it should make every real American view its contents with alarm.

Time will not permit a complete analysis of this ninety-page document but a few paragraphs will give us some idea as to how far it would take us from the beaten paths of the government founded by our forefathers. Please note carefully the title of the Bill which reads:

"A BILL

"To provide for the general welfare; to alleviate the economic hazards of old age, premature death, disability, sickness, unemployment, and dependency; to amend and extend the provisions of the Social Security Act; *to establish a Unified National Social Insurance System*; to extend the coverage, and to protect and extend the social-security rights of individuals in the military service; to provide insurance benefits for workers permanently disabled; to establish a Federal system of unemployment compensation, temporary disability, and maternity benefits; *to establish a national system of public employment offices*; to establish a Federal system of medical hospitalization benefits; to encourage and aid the advancement of knowledge and skill in the provision of health services and in the prevention of sickness, disability, and premature death; to enable the several States to make more adequate provision for the needy aged, the blind, dependent children, and other needy persons; to enable the States to establish and maintain a comprehensive public assistance program; and to amend the Internal Revenue Code."

This Bill covers every citizen from the pre-natal state to the grave and it more resembles the government of Hitler and Tojo than it does the government of our forefathers. It is a mongrel of Socialism, Communism and Imperialism.

We must bear in mind that we were citizens before we became physicians and becoming physicians

did not rob us of any of our rights nor relieve us of any of our obligations.

The members of the National Physicians Committee who worked faithfully, trying to defeat this Bill, performed a valuable service to our profession and to our country as a whole; but they were just the "little boys stopping the leak in the dyke with their fingers." The retaining wall of the dyke remains to be built and it is up to every real American to do his or her part.

This Bill makes a strong appeal to the Socialists and Communists, who want everything controlled by the government and who expect to be taken care of by the government whether they loaf or work. They are no longer satisfied at Santa Claus making the "North Pole" his residence and paying his annual visit but they want him moved to our Nation's Capital and make his visits daily.

The work of the National Physicians Committee is open to criticism on two points:

First: They only discuss the part of this radical un-American Bill that applies directly to our profession, and

Second: This partial discussion of the Bill might lead others outside of our profession to think that this fight is only made to save our own hides and not to save the country as a whole.

We must bear in mind that if these un-American radicals, who have secured such a strong foothold under the New Deal, should ever get the full control that this Bill would give, the members of our profession would do just as we were told or we would not eat; and other professions would soon be in the same boat.

The system of Insurances outlined would destroy every Insurance Company in America and the value of the policies held by millions of policy-holders would be worthless.

The Social Security Act is to be extended so that every employee would contribute 6 per cent of his earnings and the employer would contribute the same amount; this applies up to \$3,000.00. We might think that most of our profession would be left out but Sec. 963 reads, "Every self employed individual

\*Read at the meeting of the Northern Virginia Medical Society, Woodstock, Virginia, August 8, 1944.



*shall pay* a social insurance contribution equal to 7 per centum of the market value of his services rendered." It does not give us any choice as to what insurance will best suit our personal or family needs.

The system under which this Social Insurance would operate would require offices in every town and city and all overhead expenses would be raised by additional taxes and paid out of the Federal Treasury. Sec. 1109, P. 75.

All health features of the Bill would be handled by the Surgeon General of Public Health Service and the only representation the medical profession and hospitals would be an advisory council of sixteen members paid on a per diem basis, and their function would be purely advisory.

The Physician would render his services on a fee basis, a per capita basis; salary, whole or part time basis, or any combination of these that the Surgeon General directed. The Surgeon General could limit the number of patients a physician may have. The whole system would take up a greater part of the physician's time in making up reports and answering correspondence.

The Bill arranges for complaint boards and appeal boards and we could never tell when we would have to defend ourselves from complaints made by disgruntled patients assigned us by the Surgeon General. Sec. 906, P. 48.

As destructive as the Insurance and Medical features of the Bill are, there is another far more insidious and dangerous feature of the Bill which strikes directly at the very foundation of our system of government. The Bill provides for a National System of free employment offices. The American workman is led to believe that "Santa Claus" is about to make another personal appearance while in reality they and the rest of our citizens, including the medical profession, would be "sold down the river" to the racketeering labor leaders.

The average workman is just as honest as the average in any other class of citizens and millions of them would welcome relief from the "straight-jacket" in which the New Deal and labor racketeers have placed them. An honestly managed labor union can be a benefit to employee, employer and the public; but the labor union business has gotten to be the greatest racket and the greatest menace we have in our country today.

To understand this employment feature of the Bill we will have to go back a little in our history. For nearly thirty years prior to her deportation in 1920, Emma Goldman, the Russian communist leader, spent most of her time in this country trying to spread their doctrine of overthrowing our government by force. They had a rather definite plan to work by:

1. They were at all times to keep up a patriotic front and pretend to be the special friend of the working class and the down trodden.
2. They were to organize and work through labor unions by "boring from within" and create unrest and local strikes, and to work their most active members into key positions.
3. Get the labor unions banded together into one big union.
4. Call a general strike to tie up all industries and transportation systems.
5. Final step, take over our government by revolution.

The Communists as a political party never got anywhere under that name, and while they caused damage by local strikes they never presented any real menace to our country as a whole until the New Deal came into control. Before then the Communists and the Socialists were hanging around begging for the "crumbs" that fell from the tables of government and labor, but they are no longer under the table begging for "crumbs"; they now sit at the head of the table demanding the choicest "steaks" and the "light meat of the turkey", and all the "ration points" they have to surrender are their votes and their slush funds extracted from the honest American workman, often against his wishes. Our President and his "yes men" are giving them excellent "butler service".

What would really happen to us if this nationwide free employment service were put in effect by our government? "By their fruits ye shall know them." This is the standard given us by our Lord for judging, and only New Dealers and Axis leaders have felt capable of improving on this standard.

The unemployment insurance clause provides that a person may loaf and draw unemployment insurance (Page 34) "If as a condition of being employed the individual would be required to join a company union or to resign from or refrain from joining any bona fide labor organization." It does not offer any such protection to the workman who

does not want to join a union where he would have to surrender his rights as a free American citizen to a labor leader that might not even be an American. They seem to have forgotten the "equal rights clause" that they have been using as a "red herring" to mask their un-American activities.

The most elementary principles of common sense and common honesty demand that if citizens are free to join any labor union of their choice then they should be given the right to earn their living without being forced into any union against their wishes.

Another "red herring" being used by these radicals to deceive the working class is the poll tax. The President has stated that every citizen is entitled to an education. How are we to get an education furnished by any government? It can only be done by taxation. In Virginia our poll tax goes entirely to build our educational system and it is perfectly satisfactory to the overwhelming majority of the citizens of our State. Some months back Philip Murray said, "The poll tax in various states is keeping ten million citizens out of democracy." If a citizen of Virginia is not interested enough in education and democracy to pay the \$1.50 poll tax he does not vote, but it does not interfere with his working where he chooses to make his living, but if he goes to the Nation's Capital to work, even as a common laborer, he must pay \$35 to join a labor union and \$2.00 monthly dues or he and his family do not eat. Now figure out where their democracy comes in. There may be honest differences of opinion as to whether there should be a poll tax or whether this amount should be raised by other means of taxation but there is certainly nothing honest in giving the working class an anti-poll tax pat on the back with one hand while he is robbed with the other.

With the New Deal employment system funneling the working class into New Deal sanctioned labor organizations we would soon have all labor controlled by the government and the government controlled by un-American labor racketeers, and we would have exactly the kind of government that Emma Goldman came here fifty years ago to establish.

We can get some idea about what would happen to us under this widely expanded bureaucratic power by looking at some of the things that have happened and are still happening. Our great Commander-in-chief does not know anything about strategy on the

foreign battlefields, and any such attempts on his part would be like Hitler's "intuition", but he has made great use of the army on the home front.

After receiving his instructions from the C. I. O., he rushed the Army, under the command of "General" Biddle, to Chicago where the Montgomery Ward Company building was captured. This surprise move, "under cover of darkness", took the enemy completely by surprise and he was captured without a casualty. The fact that the business of Montgomery Ward Company had nothing to do with our war efforts meant nothing. The C. I. O. has issued their edict and it had to be carried out. The formality of respecting the Labor Relations Law and the rights of the company under our Constitution was entirely unnecessary. Our great Commander-in-Chief not only knows when to command the Army to move on the home front but he knows when "silence is golden". We have seen John L. Lewis, while at the head of the C. I. O., take over the steel plants by mob violence, during the "Little Steel" strike; he even turned back the U. S. Mail trucks, and nothing was done about it. We have seen Lewis call his various coal strikes and able-bodied miners loafed while our aged men and women and small children shivered in the cold. While our sons on the battle front and our allies have been begging for more supplies we have seen the number of strikes run into thousands. There were 435 strikes in April of this year with a loss of 580,000 man days and 610 strikes in May with a loss of 1,400,000 man days, yet they continue to hand us that old "chestnut" about their no strike pledge. All that our great Commander-in-Chief has ever done about the matter has been to try to block every effort made to curb this disorderly un-American element: he has vetoed every bill for that purpose and has not enforced the Smith-Connally anti-strike bill passed over his veto.

When Hon. Calvin Coolidge was governor of Massachusetts, the Boston police went on a strike and the disorderly element began looting; he restored order, made no compromise with the disorderly element and made the simple and very clear statement, "no one has the right to strike anywhere at any time against the public welfare".

Since our Commander-in-Chief has sought and received legislation that places our American labor under control of our Federal Government, all it requires to stop this disorderly and un-American ele-

ment is a President who has the common honesty and the moral courage to respect his oath of office.

Our air force has done a great job in checking Axis production by bombing factories and transportation lines in enemy territory but it has cost us many lives and billions of dollars. The Axis has a different and less costly technique for checking our production. They get their agents to call a strike and production is blocked; our sons on the battle front are "stabbed in the back". Our Commander-in-Chief protects the strikers and the cost is passed on to the American taxpayers. Is it any wonder that real democrats are becoming alarmed at the un-American activities of the New Deal?

This Murray-Wagner-Dingell Bill, which is so far-reaching that it would change our whole philosophy of government, did not spring up over night in the minds of these three New Deal "yes men". We may rest assured that it had the approval of our Commander-in-Chief and his "Supreme Council" composed of Hillman, Murray, Lewis and Green. As long as the New Deal remains in power there will be other Murray-Wagner-Dingell Bills just as un-American and as dangerous as the present one.

Our distinguished Junior Senator, Hon. Harry Flood Byrd, whose brilliant record as governor and in the U. S. Senate, for honesty, efficiency and economy has been equaled by few and surpassed by none during the entire history of our country, has repeatedly warned us against the dangers of this ever ex-

panding bureaucracy of the New Deal and its cheap surrender to these un-American labor radicals. Our distinguished Senior Senator, Hon. Carter Glass, who has had a long and distinguished career as a public servant, ten years ago clearly and accurately summed up the New Deal when he stated: "The New Deal, taken all in all, is not only a mistake; it is a disgrace to the nation. The time is not far distant when we shall be ashamed that we have wandered so far from the dictates of common honesty and common sense. I would rather have died than see the disgrace of this era." The New Deal is not honest and it is not common sense.

To say that one-third of the Nation is ill-housed, ill-fed and ill-clothed and try to leave the impression that something will be done about it might sound patriotic, but then to destroy the pigs and plow under the cotton and food crops that men had toiled to cultivate, and make these articles harder for the needy to get is just plain idiotic.

Our only protection from this and all future Murray-Wagner-Dingell Bills is for every real American to work as we have never worked before to elect honest Democrats and Republicans who believe in and have the courage to support our form of government and we must weed out all Socialistic-Communist mongrels masquerading in the "sheep skins" of democracy. In this way, and only in this way, can we be assured that our "Government of the people, by the people and for the people shall not perish from the earth".

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### "Your Doctor Speaks."

War-busy physicians who would like to interpret many medical developments to their patients but are prevented by the sheer lack of available time, will be interested in the broad new educational campaign created by The Upjohn Company. The campaign takes recent medical developments, often of life-saving value to the American public, and presents the facts simply and attractively. The effort is made to give information of immediate practical help, based on sound medical principles, and carrying a hopeful note. Each message has been carefully checked by leading authorities of the particular field,

not only for accuracy but also for the wisdom of the presentation of the facts to the consumer. Each educational piece is illustrated by a vividly characteristic painting, executed by a top American artist. These fine oil paintings will be reproduced in full color pages in many well known magazines.

Throughout 1945, messages will appear on pneumonia, pregnancy, cancer, whooping cough, stomach ulcers, the menopause and other vital health subjects of immediate interest. They will say in simple language what the physician might tell his patients if he had the leisure to do so.



## CASE REPORT OF MATERNAL DEATH

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MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

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This is a case of a 42 year old white gravida 16, para 14, admitted to the hospital November 17, 1941, with a chief complaint of vaginal bleeding. She was thought to have a fibroid uterus. An Aschheim-Zondek test was positive. Bleeding stopped and the patient was discharged from the hospital. She was readmitted four months later for induction of labor because she was thought to be past term. Painless vaginal bleeding occurred about one month following the first hospitalization, but this was not reported to her physician. He attended her before the first admission and during the period between hospitalizations. An x-ray showed an oblique presentation, which was converted to a vertex and an abdominal binder applied. Quinine and castor oil were given to induce labor. At 3 A. M. on the following morning the patient awoke in a pool of blood. A diagnosis of placenta previa was made without vaginal examination. Bleeding stopped following the original hemorrhage. The blood pressure soon thereafter was 120/70. The operating room was prepared, 1000 cc of blood was made ready for administration and the patient was transferred to the operating room. Since mild uterine contractions were occurring, a pelvic examination was done in order to determine the procedure to be followed. A central previa was found over a three and one-half centimeter dilatation of the cervix. A section was decided upon as the procedure of choice. A small

amount of bleeding followed the first examination. At the request of the assistant, he was permitted to do an examination, after having been cautioned of the dangers. Profuse bleeding followed. A living baby was delivered by classical section. Transfusion was attempted at the time the section was begun. Resort was made to cutting down on the veins because of circulatory collapse. Drugs and artificial respiration were used in a vain effort to save the patient's life. Death occurred within a few minutes.

## COMMENT

This has been classified by the Committee as a preventable obstetrical death. It is being reported in order to emphasize the narrow margin on which placenta previas run. All medical students are taught that everything must be prepared for an emergency before a suspected placenta previa is examined. Those precautions were observed in this case. The error was made in permitting the second vaginal examination. With every preparation made and, in addition, having the patient in the operating room, the patient bled to death before a sufficient amount of blood, already in the container by the operating table, could be given.

Since this case illustrates definitely that a case of previa may go beyond control within a short time, is it not in order to emphasize again that the old fixed warnings in these cases are still to be observed?

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### Vitamin Advertising and the Mead Johnson Policy.

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a

controlling agent in the use of vitamin products.

Mead Johnson & Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

## PUBLIC HEALTH

I. C. RIGGIN, M.D.,

*State Health Commissioner of Virginia*

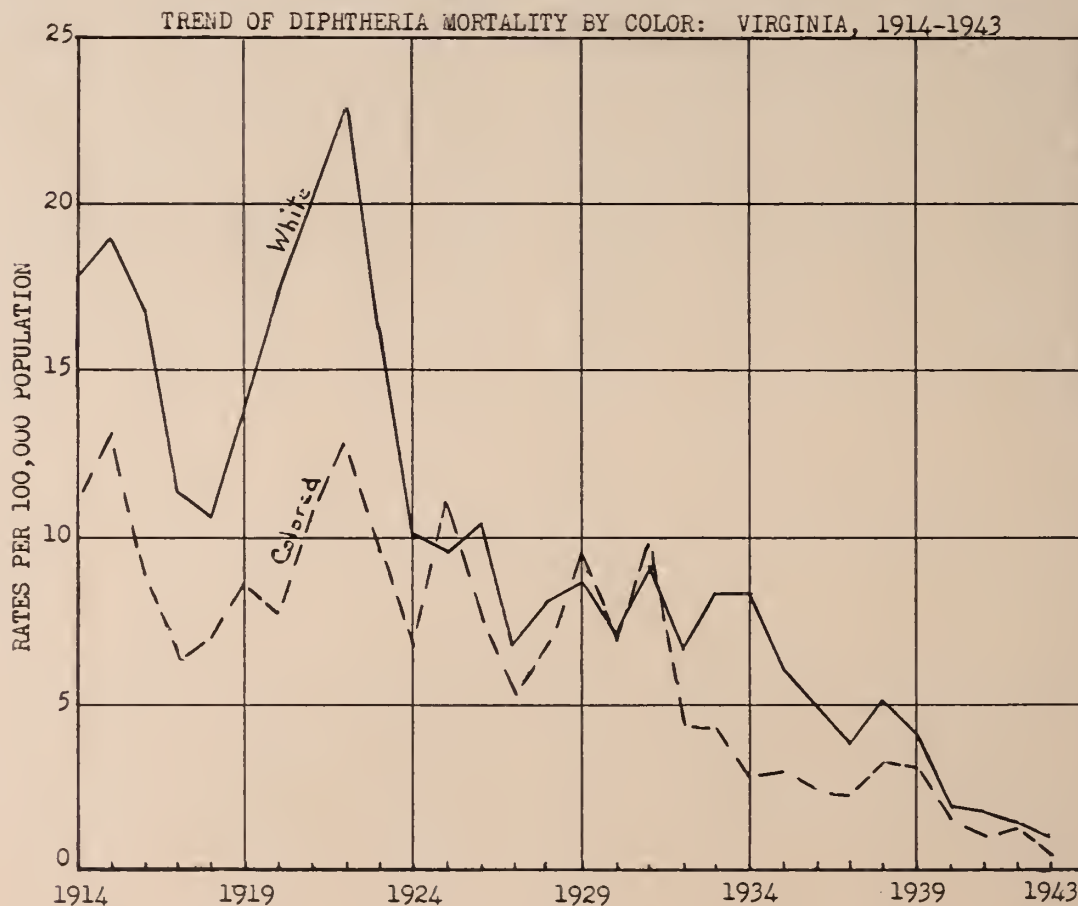
The report of the Bureau of Communicable Diseases of the State Department of Health for December, 1944, as compared with the same month in 1943, and for the period of January through December, 1944, compared with the same period in 1943, follows:

	Dec. 1944	Dec. 1943	Jan.- Dec. 1944	Jan.- Dec. 1943
Typhoid and Paratyphoid Fever	12	6	132	216
Diarrhea and Dysentery	564	437	6,810	5,865
Measles	44	2,077	17,117	12,595
Scarlet Fever	350	212	2,972	1,842
Diphtheria	31	33	325	395
Poliomyelitis	12	1	759	61
Meningitis	25	35	514	835
Undulant Fever	0	1	36	37
Rocky Mountain Spotted Fever	0	0	81	56
Tularemia	13	9	56	57

## TREND OF DIPHTHERIA MORTALITY IN VIRGINIA

The decline in deaths from diphtheria during the past thirty years in the State is spectacular. In 1914 in Virginia, three hundred and forty persons lost their lives as a result of this disease. In 1943, twenty-five persons died from this cause. The mortality rate per 100,000 population in 1914 was 15.7 in comparison with a rate of 0.9 in 1943, representing a rate decrease of 94 per cent. The preliminary figure of 18 deaths for the first eleven months of 1944 indicates an even lower rate for the past year.

The graph below shows the rapid downward trend in diphtheria mortality in the State during the past thirty years. Note the sharp upward swing between the years 1918 and 1922, after which a precipitate decline is seen until 1924. A period of fluctuation



follows for the white rate until 1934 and for the colored until 1932, after which a steady downward trend maintains until a new low record is reached in 1943. As is noted in the graph, the white rate has been consistently higher than the colored, with the exception of the years 1925, 1929, and 1931. In 1943 there were 22 white deaths, with a rate of 1.0 per 100,000 population in comparison with 3 colored deaths and a rate of 0.4.

Although diphtheria deaths occur at all ages, maximum rates are found in childhood. The death rate drops from a relatively high figure at ages one to four years to a negligible rate in ages past fifteen years. In fact, in the State in 1943 there were no deaths from this cause past nine years of age. Of a total of twenty-five deaths, twenty occurred at ages

one to four years. Two deaths occurred among infants under one year, and three deaths among children five to nine years old.

The number of cases reported in the State in 1943 was 395, which gives a fatality rate (cases per 100 deaths) of 6.3. Ten years ago in 1934 there were 1,989 cases reported, showing a fatality rate of 17.1.

No doubt, in part at least, the steady reduction in the number of cases and in mortality from diphtheria during the past decade is due to the immunization of preschool and school children. Although these figures signify progress, there is much yet to be done in the extension of the toxoid immunization program, especially among preschool children, toward a further reduction and the eventual elimination of this disease as a cause of death.

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### WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

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 Richmond.

#### New Year Meditations.

We are entering upon a New Year in our Auxiliary as well as in every activity of our lives. It should thrill us if we have enough life and interest left in us for a thrill, and there should be in spite of the shocks and disappointments of the past years. January, its first month is named after Janus, the Roman diety who was regarded as the God of beginnings. Janus had two faces, one looking forward and one looking backward. This reminds us that January is a good time to review the past and to plan for the future. Yes, we are face to face with the New Year. It holds for us opportunities, privileges and responsibilities. We do not know what they shall be. Yet we shall try to be ready for them. We know we are going to be disappointed over and

over again. Many times we shall be discouraged and almost ready to quit, but I am sure we can say even today "We shall not quit". Perhaps at other times we shall be lifted to mountain peak experiences. Relationships will take on new meaning. We shall become confident as we have fellowship with others who are doing their best to make this a better world in which to live. We cannot, however, throw ourselves into this New Year without first of all thinking of some of the experiences of the last year. We failed many times, if we have the courage to admit it, in many of our endeavors. Don't you think it worthwhile to understand, or at least try to understand, why we failed—what we should have done that we did not do, and what we did that we should not have done? We should do this because we want to make the experiences of last year contribute in the greatest degree to the work that lies before us. In thinking of our Auxiliary, and the other organizations connected with our lives, have you ever evaluated the work of our Auxiliary? If so, do you feel there is a better understanding of our Auxiliary, and what



it stands for between the laity and the profession? Has it brought about changes in the thinking of people? In other words, are the members of our Auxiliary more healthy than they were a year ago because of our teaching and influence? Are we more interested and concerned about people than we used to be? Is a spirit of good will and confidence noted among our members and all with whom we come in contact? Are we more keenly aware of the profession's problems, the needs of men and women, and the responsibilities of our Auxiliary in bringing the desired changes in the lives of our people? Has our Auxiliary been interesting enough to bring in new members?

Now, after evaluating the work of last year, we should be in a better position to see just where we stand. The medical profession and their needs should be our first concern. Are they? Do we feel, again I repeat, that there is a better understanding of what the Auxiliary stands for? Is there a spirit of good will and confidence among our members and our profession? If we can answer "Yes" to all of these questions, then we have a foundation on which to build and we have an assurance for 1945. It means that with cooperation and wise planning we shall go forward to new accomplishments. There will be a keener appreciation of our Auxiliary with its capable and untiring leaders, and a realization that we are rendering a service to our profession, and that we are promoting good will among each other, regardless of creed or color.

Let's try harder than ever to make 1945 a greater and better year in our Auxiliary. Shall we? As someone has said: "Hats off to the past, coats off to the future."

#### Northampton-Accomac Auxiliary.

The Woman's Auxiliary to the Northampton-Accomac Medical Societies held its regular quarterly meeting at the home of Mrs. B. N. Mears, at Belle Haven, on January 9th, with nineteen members present. After a delicious luncheon, the business meeting was held and included minutes of the October meeting, the treasurer's and committee reports, and welcoming of new members by the President, Mrs. C. E. Critcher. Mrs. J. L. De Cormis explained the Leigh-Hodges-Wright Memorial Bed, and Mrs. John R. Hamilton gave a short talk on the Jane Todd Crawford Memorial.

A motion was made and carried to have all practical nurses, both white and colored registered, if available for nursing, and to have the project advertised in the papers as soon as possible.

The April meeting will be held at the home of Mrs. W. B. Trower at Cape Charles. The new members of the Auxiliary are Mrs. O. L. Powell of Onancock, and Mrs. John Wise Kellam of Nassawadox. Mrs. John R. Hamilton was welcomed back after several years' absence.

(MRS. HOLLAND) CATHERINE R. TROWER,  
*Chairman, Press and Publicity.*

#### Alexandria Auxiliary.

At the September meeting of this Auxiliary, the following officers were elected for the ensuing year and immediately took office: President, Mrs. A. Abramson; president-elect, Mrs. O. A. Engh; vice-president, Mrs. R. R. Sayers; treasurer, Mrs. O. A. Engh; and secretary, Mrs. Fleming-Holland.

The first fund-raising activity of the Auxiliary was the raffling of a \$25.00 War Bond. The proceeds from this amounted to \$81.50 and were used for furnishings for the doctor's new lounge in the recent addition to the Alexandria Hospital.

At the November meeting of the Alexandria Medical Society, held jointly with Alexandria members of the dental profession, the Auxiliary prepared and served refreshments. Other activities during November were a year's subscription to "Time" for the student nurses at the hospital, a supper and entertainment at the USO on November 5, which was enjoyed by about two hundred; and the donation of \$10 to the *Washington Post* telephone fund for use of soldiers in calling their families when home on leave.

The December meeting of the Auxiliary was held in the Doctors' Lounge at the hospital that the members might see the new furnishings they had provided. Each member brought a gift to this meeting, to be delivered to the soldiers at Walter Reed Hospital for Christmas. The ladies also arranged a Christmas party for the student nurses, which proved a most enjoyable occasion.

The first work of the New Year is the annual benefit card party on February 6, to be held in Carter Hall of the hospital. This gives promise of being a great success.

MERLE FLEMING-HOLLAND, *Secretary.*

## NEW AND NONOFFICIAL WORDS

We are going through a period of tremendous activity in medicine and in politics, to say nothing of war activities. Everyone's mental horizon has enlarged. Inevitably we encounter new words and old words with new meanings. Words are in many respects like human beings. They are born, and grow in power and usefulness. Many die prematurely. Sometimes they change completely. A number of years ago we had a distinguished German gynecologist for a house guest. We had planned to get an early start to a medical meeting and we tapped on his door to let him know that breakfast was ready. He replied that he was coming *presently*, and when he appeared immediately, we realized he had learned his English from Shakespeare. Words frequently suffer from associations. *Normalcy* always brings up thoughts of the Harding Administration and excites a sense of the ridiculous. *Directive*, on the other hand, brings to mind the present administration and the increasing power of Bureaucracy. *Contact* always puts us in mind of social workers. A social worker never interviews or simply sees a person; she always *contacts* him.

It has been suggested that the VIRGINIA MEDICAL MONTHLY have a department wherein can be discussed new words and old words that have acquired new meanings. Fortunately, Dr. E. C. L. Miller, Collaborator on the American Illustrated Medical Dictionary, and Dr. R. J. Main, both of the Medical College of Virginia, Richmond, have consented to give us something in this connection from time to time, and we hope that they will not only discuss the definition, history, background and pronunciation of new words but will also undertake to discuss words that are frequently misused or mispronounced. We would like, for instance, to have them discuss the pronunciation of penicillin. We would also be grateful if they could do something about the misuse of the word *temperature*. An interne or nurse will gravely inform you that your patient has a *temperature*, when what is meant is an elevation of temperature or a fever. If any of our readers have similar suggestions or requests, please send them to the Word Editor, VIRGINIA MEDICAL MONTHLY.

The word *cholagogue* has been used since the time of Galen, more or less loosely, for the formation and/or the excretion of bile. More recently, the term *choleresis* has been used to divide the field with *cholagogue*, the one

for the secretion and the other for the excretion of bile as by contraction of the gall bladder or relaxation of the sphincter. However, this distinction has not been uniformly observed. The term *cholepoietic* has also been used and from its derivation it should mean the formation of bile. These liver terms are so important and have been so loosely used that A. C. Ivy\* has recently suggested the following additional terms:

**CHOLECYSTAGOGUE:** a general term for any agent which tends to remove bile from the gall-bladder.

**CHOLECYSTOKINÉTIC:** An agent which tends to cause contraction of the gall-bladder, such as *cholecystokinin*.

**CHOLERÉSIS:** a general term for any increase in the output of bile. Suitable prefixes would indicate the particular constituents thus increased, for example, *hydrocholerésis*, increase in water; *cholanerésis*, increase in cholanin acid; *taurocholanerésis*, increase in taurocholic acid; *cholechromerésis*, increase in bile pigments; *cholesterolerésis*, increase in cholesterol, etc.

**CHOLEPOIESIS:** a general term for the formation of bile. Here again prefixes can indicate the particular constituents formed, for example, *taurocholanopoiesis*, the formation of taurocholic acid; *cholesterolopoiesis*, the formation of cholesterol, etc.

The relatively recent developments in aviation medicine are inevitably bringing in new terms. *Denitrogenation*, for example is the more or less complete removal of the dissolved nitrogen from the body to prevent *aeroembolism*. *Aeroembolism* is the release of bubbles of nitrogen in the body when the atmospheric pressure is too rapidly reduced. It is thus similar to caisson disease which affects persons who have been working in compressed air. If a *pressurized cabin* aeroplane containing an atmosphere corresponding to 10,000 feet elevation explodes at 40,000 feet, the aviator undergoes *explosive decompression*. Modern aeroplanes are so powerful that they can ascend rapidly enough to produce the effects of explosive decompression on the aviator. It has been arbitrarily ruled that an ascent more rapid than 5,000 feet per minute shall be considered *explosive decompression*.

A few days ago a letter came from someone in Oregon asking for the correct plural of *meatus*. In Latin the plural and the singular of this word are exactly alike. However, English tends to assimilate foreign words into its own substance and then they take on English plurals. *Meatuses* is not euphonious but it is obviously plural and less apt to cause confusion than *meatus* which is so obviously singular. During the incorporation period either form is allowable but we have a feeling that *meatuses* will win out in the end.

A word which is coming into popular use is *psychosomatic* medicine. The intent is to emphasize the interaction of mind and body. Its proponents claim that the

\*Gastroenterology, 3: 54, July, 1944.

word will serve a useful purpose at the present time as such interaction has been too much neglected in the past. Many biologists, however, look upon man as a going concern, as a unit, as an integrated whole. If and when this view becomes more common among the physicians, the popular term may then be *holistic* medicine.

Have you a *trepópnic* patient? *Trepópnéa* is a condition in which the patient is comfortable in one recumbent position but not in another. For instance, a patient with a unilateral hydrothorax may be more comfortable lying on that side, than when on his back or on the other side.

## BOOK ANNOUNCEMENTS

Books received are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

**The Avitaminoses.** The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By WALTER H. EDDY, Ph.D., Emeritus Professor of Physiological Chemistry, Teachers College, Columbia University; and GILBERT DALLDORF, M.D., Pathologist of the Grasslands and Northern Westchester Hospitals, New York. Third Edition. Baltimore. The Williams and Wilkins Company. 1944. xi-438 pages. Cloth. Price \$4.50.

**Endocrinology of Woman.** By E. C. HAMBLÉN, B.S., M.D., F.A.C.S., Clinical Professor of Endocrinology and Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine; Chief of the Endocrine Division and Endocrinologist, Duke Hospital, Durham, N. C. Charles C. Thomas. Springfield, Illinois. 1945. xii-571 pages. Illustrated. Cloth. Price \$8.00.

**Quick Reference Book for Medicine and Surgery.** A Clinical, Diagnostic, and Therapeutic Digest of General Medicine, Surgery, and the Specialties, Compiled Systematically from Modern Literature. By GEORGE E. REHBERGER, A.B., M.D. Twelfth Edition. 1944. J. B. Lippincott Company. Philadelphia. viii-1460 pages. Illustrated. Cloth. Price \$15.00.

This book is essentially divided into eleven parts which deal respectively with (1) General Medicine and surgery (this phase includes Neurology and the Diseases of Infancy and Childhood); (2) Gynecology; (3) Genito-Urinary Diseases; (4) Obstetrics; (5) Skin Diseases; (6) Diseases of the Eye; (7) Diseases of the Ear; (8) Diseases of the Nose; (9) Diseases of the Throat; (10) Orthopedics; (11) Drugs.

Practically the whole field of medicine with the exception of Psychiatry is offered for quick reference. Each disease or disorder is described and

treated alphabetically. The disease or disorder is described in a concise manner as to diagnosis, description, etiology, prognosis and, finally, treatment. Operative treatment *per se* is not given. Diagnostic laboratory reports as well as pictures are offered wherever required.

Part Eleven lists all the drugs mentioned in the body of the book. These drugs are also listed alphabetically. Each drug is described as to its Pharmacological actions and therefore is an asset to the physician.

The purpose of the book is to offer useful and needful material in bedside therapeutics. The individual completeness of treatment of each subject makes it immediately available for practical needs. It is a time saver.

Much time has been devoted by the author to make this book as thorough and reliable as possible in hope that it will be useful to practitioners as a quick reference book. The reviewer owns one of these books and has found it most useful. He therefore does not hesitate to offer it to fellow physicians as excellent for sound treatment in the field of medicine.

VINCENT E. LASCARA.

**Practical Malaria Control.** A Handbook for Field Workers. By CARL E. M. GUNTHER, M.D., B.S., D.T.M. (Sydney), Field Medical Officer, Bulolo Gold Dredging Ltd., Territory of New Guinea, at present with the Australian Medical Corps. Foreword by Professor Harvey Sutton, O.B.E., M.D., F.R.A.C.P., B.Sc., D.P.H., F.R.San.I. Philosophical Library, New York. 1944. 91 pages. Cloth. Price \$2.50.

This short (91 page) handbook is offered as a practical aid to those with only an academic knowledge of malaria who are for the first time meeting the problems of this disease in the field. As such, the manual is a valuable aid. The author who has had ten years of experience in Malaria control in New Guinea, expresses his views lucidly, and, better, specifically describes measures and methods.

The manual is divided into three sections: Anti-Malarial Measures, Diagnoses, and Treatment. The first of these sections is by far the best because of its practicability and because it is based on the author's personal experience. Although nothing new is contributed to the diagnoses or treatment of Malaria, a ready and compact reference is afforded the busy malariologist.

This handbook achieves the author's purposes of providing a definite outline in practical problems involving field Malaria control.

G. W.



# VIRGINIA MEDICAL MONTHLY

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*Editor Emeritus*

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*Editor*

AGNES V. EDWARDS  
*Business Manager*

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## Reminiscences

AS we sit by a fireside made lonesome because the children have gone to war, our thoughts turn back to times when the world was filled with hardships and there were no uncertainties, partly because that is the privilege of old age and partly because of weariness from worrying about how long the war will last. In the good old days when you had a night call, and there were many such, you had the choice of hitching up, saddling up, or walking. If the patient lived within a mile, we usually walked; otherwise, we got out the horse. We still remember one sleety night walking about eight blocks with the sleet cutting what little of the face that had to be exposed, only to be told that "pappy dreamed he was dying, but he done woke up now." This was told through a crack in the door with not so much as a "thank you", much less an invitation to come in and get warm. The thought of a fee did not help, for these people never paid a doctor. In fact, we practiced three years before we had a patient who could be expected to pay the doctor. That was a red-letter day that is still bright in our memory. There were hardwood floors and mahogany furniture, books and good pictures, and although it was winter, there was no "poor-folksy" odor that made you wonder where to put your hat where it would be safe from invasion. Later, I found that the master of the house was a Mark Twain fan, and many a night after the children's croup had been relieved, we would discuss the finer points of the "Life on the Mississippi" or "Tom Sawyer", or "Huckleberry Finn". We remember one night over some beer and cake that we both agreed with Jim that "Solomon wasn't no wise man". No one with a thousand wives could lay any claim to wisdom.

Summer was the busy time. A doctor who had fewer than twenty to thirty cases of typhoid fever on his hands at a time had no practice to speak of. Sometimes we demonstrated the plasmodium, but usually we relied on the therapeutic test to differentiate malaria from typhoid fever. If a patient with a fever and a palpable spleen resisted quinine in solution for three days, we called it typhoid fever, and usually a

crop of rose spots confirmed our diagnosis. The children had Summer Diarrhoeas and the "second summer" was still something to be dreaded. Medication other than what could be given by mouth had to be engineered by the doctor, for there were few trained nurses. There was no intravenous medication in those days, but the doctor made good use of enemas of all sorts. The chief drawback was that he had to give them himself. The stomach tube was sometimes used for diagnostic purposes but mostly for therapeutic effect. Its diagnostic value was so little thought of by the public that whenever we attempted it the patient went to another doctor. Oxygen therapy was unheard of, but we frequently resorted to artificial respiration. We well remember one baby with pneumonia to whom we gave artificial respiration at intervals for three days and three nights, and much to everybody's surprise the baby recovered.

The only "biologicals" in use were tetanus antitoxin and diphtheria antitoxin. Although they were spectacularly efficient, they were still looked on with suspicion by the public. In our neighborhood there was a youth who had a typical monoplegia of anterior poliomyelitis. The story was current, however, that his paralysis followed an injection of diphtheria antitoxin. Whenever the need for diphtheria antitoxin arose, two things always happened. We had to combat the firm conviction on the part of the parents that antitoxin produced paralysis, and Father would always exclaim how he wished he had had "this stuff" when he began to practice medicine.

Obstetrics was truly primitive. One never saw the patient until she fell into labor, and even then the majority did not send for a doctor unless there were complications—hemorrhage, dystocia, or convulsions. A few upper class patients sent an occasional specimen of urine to be examined. Anesthesia, what little there was, consisted of a few whiffs of chloroform—Chloroform a la Reine, we called it. The older doctors usually kept the chloroform bottle so tightly corked that most babies arrived before they could get the stopper out.

There were a few surgeons and they were chiefly concerned with surgery of the appendix and with gynecology. Amputations were done in the home by the general practitioner, and all fractures were treated in the home. X-rays were unheard of. Surgery of the upper abdomen, the thorax, and of the brain was non-existent.

Such were the highlights of practice forty years ago. It seems incredible that so many advances could have taken place in so short a time. However, the most astounding change has been in the attitude of the public. Forty years ago the doctor was wanted only in cases of dire emergency or extreme suffering. At other times he was emphatically not wanted. Most people thought too little of him to bother about paying him. The idea that he was a necessity would have been considered the height of absurdity at the beginning of the century, and that governments should be concerned with the uneven distribution of this necessity would have been considered the acme of foolishness. It was hard enough to get governments interested in protecting the water-supply, to say nothing of milk. That the people should be interested in devising plans for prepaying their doctors is so novel that even now the doctors cannot get used to it.

#### Control of Disease Saved One Million Lives in 1942

SINCE we wrote the above editorial our attention was called to the Statistical Bulletin of the Metropolitan Life Insurance Company for November. "As a result of the general improvement in mortality in our country since the beginning of the century, it is estimated that more than 1,000,000 lives of white persons alone were saved from death in 1942." The greatest saving of life occurred in certain infectious

diseases. Had the mortality rate of forty years ago pertained in 1942 there would have been 269,000 deaths from influenza and pneumonia instead of the 61,051 that actually occurred. The sulfa drugs were responsible for much of this improvement. However, the deaths from tuberculosis were only one-sixth of the number there would have been had there been no concerted movement to control the spread of this disease and to raise the standards of living, and had the methods of treatment remained as they were in 1900. The death rate from diarrhea and enteritis declined so rapidly that instead of 160,000 deaths in 1942 there were only 11,815. The infectious diseases of children declined so greatly that instead of 76,400 white children dying from these diseases there were only 4,349 such deaths. The mortality from diphtheria was only one-fortieth of what it might have been. There were only 504 deaths from typhoid fever in the white population when there would have been 74 times this number had the conditions of 1900 existed in 1942. Nearly 10,000 fewer women died of diseases incident to childbearing in 1942 than would have died under conditions of four decades ago. On the other hand, there were 60,424 more *recorded* deaths from organic heart disease than were expected on the basis of mortality in 1900; 51,091 more recorded from cancer, and 15,205 more recorded deaths from diabetes. Just why the study was limited to the white population is not stated. Had the whole population been included in the study, the saving would have been greater and in some items at least more spectacular. In any event the figures are almost incredible.

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#### Floral Eponym (24)

POINSETT, JOEL ROBERTS, 1779-1851.

##### Poinsettia

(*Euphorbia Poinsettiana*, Buist. *Poinsettia Pulcherrima*, Graham)

THIS most popular of all Christmas plants goes by many common names; Christmas Flower, Easter Flower, Lobster Flower, Mexican Flame-Leaf, besides the one we know it by in Virginia, i. e., Poinsettia. It is a tropical American shrub with inconspicuous flowers and flaming red leaves or bracts clustered near the top. Some varieties have pink or white bracts.

Poinsett was a Charlestonian who studied medicine at Edinburgh. However, he did not practice but went into politics. According to the Encyclopedia Britannica, he is noteworthy for having secured for John C. Frémont an appointment as teacher of mathematics on board the sloop of war, "Natchez", in 1833, and again some eight years later, a second lieutenancy in the United States Army where, as a topographical engineer, he was the assistant of the French explorer, Jean Nicholas Nicollet. Mrs. St. Julien Ravenel is kinder to Poinsett's memory, and in her "Charleston" gives many references to his doings when he lived in that city. He was the only son of a wealthy physician and was therefore able to follow his own fancies. When his health failed he traveled in Europe where he met many prominent people and became the friend of Czar Alexander. The Czar wanted him to remain in Russia, but he returned home and was sent on missions to South America and to Mexico. Subsequently, he was elected to Congress. Next to adventure he loved conversation and flowers. Besides the Poinsettia, he brought home from Mexico the red and yellow mimosa and a hibiscus whose flowers change from white to pink and red in a single day. His breakfasts in Charleston were almost as famous as the concerts and balls of the St. Cecilia Society. A street in Charleston bears his name.



## Societies

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### The Warwick County Medical Society

Met on December 12 with Dr. Thomas Hunnicutt, president, presiding. Dr. A. A. Creecy, delegate to the State Society meeting in Richmond, presented the medical service plan as approved by the Medical Society of Virginia. There was a great deal of discussion and it was voted to accept the plan with the following recommendations: That they would like it to include (1) a pathologist on the board; and (2) a key or some different colored card to denote those persons earning over \$3,000 annually.

The State Mental Hygiene Society had requested the establishment of a free clinic in Newport News and a motion was passed favoring this.

The following officers were then elected: President, Dr. David Blechman; vice-president, Dr. Russell Buxton; and secretary-treasurer, Dr. W. A. Mitchell. All are of Newport News.

### Danville-Pittsylvania Academy of Medicine.

At the January meeting, the following officers were elected for 1945: President, Dr. P. W. Miles, Danville; vice-president, Dr. C. D. Bennett, Chat-

ham; and secretary-treasurer, Dr. S. Newman, Danville.

### The Patrick-Henry Medical Society

Held its regular quarterly meeting in Martinsville on January 5, with the President, Dr. E. N. Shockley, presiding. Dr. William Leslie Kirby, Winston-Salem, North Carolina, gave an illustrated paper on "Contact of Allergic Dermatitis".

Dr. T. Henry Dickerson is secretary-treasurer of this Society.

### Northampton County Medical Society.

At the regular quarterly meeting of this Society on January the 11th, Dr. S. K. Ames of Cape Charles was elected president, and Dr. H. L. Denoon of Nassawadox vice-president. Dr. W. Carey Henderson, also of Nassawadox, was re-elected secretary-treasurer.

### The Albemarle County Medical Society,

At its meeting on January the 4th, elected the following officers for 1945: President, Dr. Tiffany J. Williams; vice-president, Dr. M. K. Humphries; and secretary-treasurer, Dr. W. Roy Mason (re-elected).

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## News

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### A.M.A. Meeting Cancelled.

With the desire to cooperate to the fullest extent with the request of the Office of Defense Transportation and in the interest of the Nation's war effort, the Board of Trustees of the American Medical Association has officially announced the cancellation of its ninety-fifth annual session which was scheduled to meet in Philadelphia in June. It is expected, however, that there will be a meeting of the House of Delegates in Chicago, in which case dates will be announced.

Notices have also been received of the cancellation of the following meetings scheduled in Chicago

in February: National Conference on Medical Service on the 11th; Council on Industrial Health, 13th-15th; and Congress on Medical Educators and Licensure, 12th-13th.

### Southern Medical Association.

The Association held an excellent meeting in St. Louis in November, despite the crowded hotel and transportation difficulties. There was an attendance of 4,086, including 1,991 physicians, with women guests, medical students, nurses, exhibitors and others making the grand total. Dr. Edward G. Balenger of Atlanta succeeded to the presidency, and

the following were elected: President-elect, Dr. M. Y. Dabney of Birmingham; vice-president, Dr. E. Vernon Mastin of St. Louis; chairman of Board of Trustees, Dr. Walter E. Vest of Huntington, W. Va. Mr. C. P. Loran of Birmingham continues as secretary manager. Place and dates for the 1945 meeting will be selected by the executive committee of the council.

### **News from the University of Virginia, Department of Medicine.**

Dr. Stephen H. Watts, former Professor of Surgery, has added a gift of \$5,000 to an earlier gift of \$15,000 for a Book Fund for the Medical Library. A gift of \$500 has been received from Dr. Francis McGovern of Danville for the purchase of books in the fields of Ophthalmology and Otolaryngology for the Medical Library.

Dr. Hugh Paige Newbill, Assistant Professor of Neurology and Psychiatry, has been elected a member of the Board of Directors of the Virginia Society for Crippled Children and Physically Handicapped Adults. The Board of Directors of this Society has given Dr. Newbill a grant of \$2,500 in support of his work in the Convulsive Disorder Clinic at the University of Virginia Hospital.

Dr. D. C. Smith, Professor of Dermatology and Syphilology, reports that the Squibb Institute for Medical Research has extended their grant for the fellowship here to study the use of clorarsen in syphilis to the date of January 15, 1946. The sum appropriated annually is \$1,200.

Dr. Oscar Swineford, Professor of the Practice of Medicine, has been working since March, 1944, under a grant of \$1,000 from Wyeth and Company. As a part of this work he read a paper at the American Academy of Allergy meeting in New York on December 11, 1944, entitled "Reaction to Anti-Pneumococcus Rabbit Serum, the Role of Reversed Passive Anaphylaxis and of Inherent Toxicity of Antiserum, Failure of Heat to Separate Sensitizing from Therapeutic Antibody: An Experimental and Clinical Study". At this meeting Dr. Swineford was elected President of the American Academy of Allergy.

The Alpha Eta Chapter of Phi Beta Pi presented Dr. Roscoe R. Spencer, Chief of the National Cancer Institute, in its annual lecture at the Medical

School of the University of Virginia on January 15, 1945. Dr. Spencer's subject was "Problems of Cancer Biology".

### **Portable Footrest.**

A portable, adjustable footrest for use by bed patients has been invented by the Consultant Nurse, Rheumatic Fever Program, State Department of Health.

The purpose of the footrest is to support the feet in the proper position, to "brace" patient in comfortable sitting or lying position, to lessen fatigue, and to contribute to a very important psychological effect—that of maintaining in patient sensation of foot to floor contact.

Built of wood heavy enough so as to remain stationery and covered with a washable, removal covering, the footrest, by simply reversing it, can be used by patients lying down or sitting up in bed. Another commendable feature is that it can be used inside respirators.

Available in regular size for use by children as well as adults of average height, and contracted size for use by adults of more than average height, this patented appliance now is in quantity production and from reports is being received enthusiastically by hospitals, physicians, and nurses.

### **New Sound Film Strip.**

"Jimmy Beats Rheumatic Fever," a 15-minute sound film strip, has just been released by the Metropolitan Life Insurance Company. The strip was made under the supervision of George M. Wheatley, M.D., Assistant Medical Director of the Company, and the script was reviewed by T. Duckett Jones, M.D., of the House of the Good Samaritan, Boston, Massachusetts.

Other material which will help in rounding out a program on rheumatic fever is available from the Company. Requests for this and the strip should be addressed to Welfare Division, Metropolitan Life Insurance Company, 1 Madison Avenue, New York 10, New York.

### **Brochure on Dr. Beaumont.**

Organization of the Dr. William Beaumont Memorial Foundation is announced in a handsome brochure now available to members of the profession. The home of the foundation is at Prairie Du Chien,

Wisconsin, where Dr. Beaumont carried on many of his history-making experiments. It is housed in a restoration of the old Fort Crawford Military Hospital.

The Foundation, organized as a memorial to the pioneer physiologist and as an American medical shrine, is sponsored by a group of eminent medical men and community-minded Wisconsin citizens.

The brochure gives an interesting history of Beaumont, the New England boy whose backwoods research and observations laid the ground work of modern physiological science, and carries many excerpts from Dr. Beaumont's diaries as well as his famous "51 Inferences".

Medical men may secure a copy of the booklet by writing the Dr. William Beaumont Memorial Foundation, Prairie Du Chien, Wisconsin.

### **The McGuire General Hospital,**

Army hospital just outside of Richmond, was officially dedicated on January the 23rd, at which time an oil portrait of Dr. Hunter Holmes McGuire, for whom the hospital was named, was presented by members of his family. His grandson, Dr. Hunter H. McGuire of Richmond, made the presentation and it was accepted by Colonel P. E. Duggins, M.C., on behalf of the entire hospital personnel. A short concert by the Camp Lee Army Service Forces band preceded the dedicatory exercises. Colonel E. E. Gesler, of the army corps of engineers, presented the seventy-two buildings to the Medical Corps, and Brigadier General R. W. Bliss, assistant surgeon general, accepted them for the surgeon general and the medical department. Major General Philip Hayes, commanding general of the Third Service Command, Baltimore, gave an address on "The Importance of McGuire General Hospital in the Army Medical Program", and Dr. W. Lowndes Peple of Richmond spoke on Dr. McGuire.

### **Married.**

Captain Sam Silver, MC., AUS., Waynesboro, and Miss Lesley D. Purry, Brisbane, Queensland, Australia, June, 1942. He is a graduate of the Medical College of Virginia, class of 1934.

Captain Joseph Thomas Phillips, Jr., MC., AUS., Norfolk, and Miss Anne Blair Pendleton, Newport News, December 30th. He is a graduate in medicine from the University of Virginia in 1937 and

is at present stationed at Aberdeen Proving Grounds, Maryland.

Lieutenant Fred Carlton McCall, MC., AUS., Norton, and Miss Evelyn Marguerite Carter, Farmville, January 1st. He is a graduate of the Medical College of Virginia, class of 1943.

Dr. E. David Blechman of Newport News and Miss Carolyn Hess of New York, November 30.

### **Promotions.**

The following promotions have been noted among our members in the Service:

Dr. Edmund Horgan, Delaplane, to Colonel, AUS.

Dr. Ernest N. Serrano, Norfolk, to Lieutenant Commander, USNR.

Dr. Charles F. Gaylord, Staunton, to Captain, AUS.

Dr. Sam Silver, Waynesboro, to Captain, AUS.

Dr. Wilbur M. Bowman, Petersburg, to Major, AUS.

### **Capt. and Mrs. Sam Silver**

Are receiving congratulations on the birth of a daughter, born January the 18th. Capt. Silver entered the medical service of the Army from Waynesboro in 1941 and, after overseas duty, is now stationed at Camp Lee.

### **Borden Award.**

"For outstanding achievement in research in nutrition of infants and children", Dr. Harry Gordon, assistant professor of Pediatrics and Dr. S. Z. Levine, professor of Pediatrics, at the Cornell University Medical College, were joint recipients of the first annual Borden Award to be administered by the American Academy of Pediatrics. Presented at the Academy's Wartime Conference on Child Health in St. Louis, Missouri, the award was made for metabolic studies on the nutritional requirements of premature and full-term infants. These studies contribute a physiologic basis for individualized feeding.

The Borden Awards which carry with them a commemorative gold medal and \$1,000 were established in 1937 to encourage and give recognition to scientific research in the fields related to the food industry. They are administered by seven scientific associations.



### New Books.

The following are recent additions to the Library of the Medical College of Virginia and are available to our readers under usual library rules:

- Anderson—Synopsis of pathology.  
 Anthony—Anatomy and physiology.  
 Association for Research in Nervous and Mental Diseases—Pain.  
 Beers—A mind that found itself.  
 Brown—A mind mislaid.  
 Head—Aphasia and kindred disorders of speech. Vol. I and II.  
 Hertzler—Diseases of the thyroid gland. 1941.  
 Levy—The allied dental council.  
 Lippincott's Quick Reference Book for Medicine and Surgery. 12th ed.  
 Markham—Climate and the energy of nations.  
 Moore—Textbook of pathology.  
 Myrdal—An American dilemma. Vol. 1 and 2. 1944.  
 Orton—Reading, writing and speech problems in children. 1937.  
 Osborne & Holmquest—Technic of electrotherapy and its physical and physiological basis.  
 Roberts—Persistence and change in personality patterns. 1943.  
 Rolleston and Moncrieff—Minor surgery. 1944.  
 Rosen, G.—The history of miner's diseases. A medical and social interpretation.  
 Russell—Terminal education in higher institutions. 1942.  
 Selling—Synopsis of neuropsychiatry.  
 Solomon, ed.—Manual of military neuropsychiatry.  
 Van Alyea—Nasal sinuses.  
 White—Heart Disease. 3rd. ed. 1944.

### For Sale.

Bausch & Lomb. 50 mm. Colorimeter, reconditioned.

McKesson Portable O. B. gas and ether unit, complete with 2 D cylinders.

Gilbert Portable O. B. bed, complete.

Write No. 175, care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond 19, Virginia. (Adv.).

### For Sale.

One Luxor B. Alpine Lamp in good condition. Shenandoah Valley Bank, Winchester, Virginia. Executor of Estate of Dr. J. E. Harris, deceased. (Adv.).

### Further Investigations in the Treatment of Vitiligo.

Dr. Benjamin F. Sieve writes:

"On looking over my paper on vitiligo, which appeared in the January issue of the VIRGINIA

MEDICAL MONTHLY, I find that one error has occurred. On page 14, at the bottom of the left, and top of the right columns, this sentence appears: ' . . . or by giving ten to fifteen *units of liver* extract parenterally bi-weekly for two to six doses.' This should read: ' . . . or by giving ten to fifteen *unit liver* extract parenterally . . . '

"Apparently this error was made by us, but I wondered if it would be possible to have a correction appear in a succeeding issue of the MONTHLY. I would greatly appreciate your courtesy in doing this for me."

NOTE: This paper was received for publication in February, 1944.

### Richmond Pediatric Society.

At the regular meeting of this Society on January the 18th, Dr. Louise Galvin and the Pediatric Staff of the Medical College of Virginia presented a symposium on Rheumatic Fever. At the business session, the following were elected officers for 1945: President, Dr. T. Stanley Meade; vice-president, Dr. Howard Urbach; and secretary-treasurer, Dr. Edwin L. Kendig, Jr.

### Multiple Boils Cured by Penicillin.

The rapid disappearance and cure of multiple furunculosis (boils) observed in 6 children under penicillin treatment indicates a result far superior to any previously known therapy for this condition, Rose Coleman, M.D., and Wallace Sako, M.D., New Orleans, report in *The Journal of the American Medical Association* for October 14. It was particularly noteworthy that some of the cases treated by Coleman and Sako had the boils superimposed on prickly heat, a condition which constitutes a common problem in the South and which often proves to be very refractory to treatment.

## Obituaries

### Dr. Louis Garrard Roberts,

Prominent physician of Albemarle County, died suddenly on October the 26th, near his home at White Hall. While on his way to a packing shed on his farm, he was stricken with a heart attack and died at the wheel of his car. He was a native of

Alabama and fifty-four years of age. Dr. Roberts graduated in medicine from the former University College of Medicine in Richmond in 1912 and shortly thereafter located in Albemarle County for practice. He had been a member of the Medical Society of Virginia for thirty years and took an active part in community affairs, being a member and, at time of his death,, president of the board of supervisors, a member of the County Board of Public Welfare, and for sometime he served as chairman of the County Democratic Committee. He is survived by his wife and two daughters.

#### Resolution on Death of Dr. Roberts.

Dr. Louis Garrard Roberts of White Hall, a prominent physician of Albemarle County, died suddenly on October 26, 1944, at the age of 54. A native of Alabama, Dr. Roberts was graduated from the University College of Medicine at Richmond in 1912. He lived and practiced in Albemarle for thirty-one years. While always interested in his profession, Dr. Roberts was active in the civic affairs of the State and County. At the time of his death he was chairman of the Board of Supervisors of Albemarle County. His untimely death has caused a great loss to his community and country. He will be missed in his profession, and missed in his civic life where his honest convictions have endeared him to hundreds of persons.

THEREFORE, BE IT RESOLVED, that in the death of Dr. Roberts the Albemarle County Medical Society has sustained a great loss, likewise Albemarle County and the community in which he labored so unselfishly, and,

BE IT FURTHER RESOLVED, that this humble tribute to our friend and fellow member be written into the minutes of the Albemarle County Society and that a copy be sent to the VIRGINIA MEDICAL MONTHLY, and a copy to Mrs. Roberts.

E. D. DAVIS, *Chairman*  
PERCY HARRIS

#### Dr. William Percy Jones,

Prominent physician of Urbanna, died January 22nd. He was sixty-eight years of age and a graduate of the Medical College of Virginia in 1898. Dr. Jones had been a member of the Medical Society of Virginia for forty-two years. He was also a Mason. His wife and four children survive him.

#### Dr. Edward Thomas Glover,

For the past twenty-seven years city coroner of Portsmouth, died on January the 11th. He was forty-nine years of age, and a graduate of the Medical College of Virginia in 1916. In addition to his office as coroner, Dr. Glover was an assistant surgeon for the Seaboard Air Line Railway, and an examining physician for the Selective Service Board in Portsmouth. He was a Mason, and a member of his local and the State medical societies. He is survived by his wife and two children.

#### Dr. George Hume Steuart

Died from a heart complication in a Richmond Hospital on January 6th, in the 80th year of his life. He was born at West River, Maryland, of a distinguished Southern Maryland family, he being the eighth physician in 200 years of that line. Graduating at the University of Maryland, class of 1898, he served as assistant superintendent, then superintendent of the University Hospital, successively. In 1903 he was appointed assistant surgeon to the U. S. Marine Hospital in Baltimore. In 1907 he came to Virginia and located at Ottoman where he was a most successful physician; particularly as a diagnostician he showed rare ability, having a brilliant mind and the advantage of travel and wide hospital training and experience. For many years he was a member of the Medical Society of Virginia and the Northern Neck Medical Society. His wife, a daughter, a son and three grandchildren survive him. He was greatly esteemed and greatly loved by all who knew him.

#### Dr. Adrian Xavier Urbanski,

Perth Amboy, N. J., an alumnus of the Medical College of Virginia, class of '24, died on November the 9th, at the age of forty-six. Death was due to hypertensive cardiovascular disease. Dr. Urbanski served an internship at the Newark (N.J.) City Hospital; was attending surgeon at the Perth Amboy General Hospital, and formerly city physician.

# RÂLES by RADIO



*"Your man has an asthmatic attack . . . wrap him in blankets with hot water bottles and give him an injection of Adrenalin Chloride"*

Spanning hundreds of miles of ocean, these life-saving directions of a Navy doctor in Hawaii were carried by radio to a small vessel "somewhere in the Pacific" on which a seaman lay unconscious. A stethoscope over the patient's chest with ear pieces pressed close to the microphone had made it possible for the physician to hear the breath sounds and heartbeat in Honolulu.

Thus in war, as in peace, Adrenalin Chloride is the first thought of the physician for the prompt relief of asthmatic paroxysms.

Its ability to relax spasms of bronchial musculature, to stimulate the heart with increase in cardiac output, to raise systolic arterial pressure and widen pulse pressure, and to constrict blood

vessels of the skin gives Adrenalin a dynamic and diversified therapeutic action.

In addition to its use in bronchial asthma, Adrenalin (epinephrine) is widely employed as a hemostatic, as a vasoconstrictor in vascular engorgement of the nasal passages, to prolong the effect of local anesthetics, and as an aid to resuscitation in shock and anesthesia accidents.



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# It Can Happen Here

LEST WE FORGET—we who are of the vitamin D era—severe rickets is not yet eradicated, and moderate and mild rickets are still prevalent. Here is a white child, supposedly well fed, if judged by weight alone, a farm child apparently living out of doors a good deal. This boy was reared in a state having a latitude between 37° and 42°, where the average amount of fall and winter sunshine is *equal to that in the major portion of the United States*. And yet such stigmata of rickets as *genu varum* and the quadratic head are plain evidence that rickets does occur under these conditions.

How much more likely, then, that rickets will develop among city-bred children who live under a smokepall for a large part of each year. True, vitamin D is more or less routinely prescribed nowadays for infants. But is the antiricketic routinely administered in the home? Does the child refuse it? Is it given in some unstandardized form, purchased from a false sense of economy because the physician did not specify the kind?

A uniformly potent source of vitamin D such as Oleum Percomorphum, administered regularly in proper dosage, can do more than protect against the gross visible deformities of rickets. It may prevent hidden but nonetheless serious malformations of the chest and the pelvis and will aid in promoting good dentition. Because the dosage is measured in *drops*, Oleum Percomorphum is well taken and well tolerated by infants and growing children.



*Example of severe rickets in a sunny clime.*



## EXIGENCY OF WAR

Oleum Percomorphum 50% is now known as Oleum Percomorphum with other Fish Liver Oils and Viosterol. The potency remains the same; namely, 60,000 vitamin A units and 8,500 vitamin D units per gram. It consists of the liver oils of percomorph fishes, viosterol, and fish liver oils, a source of vitamins A and D in which not more than 50% of the vitamin D content is furnished by viosterol.

Supplied in 10 c.c. and 50 c.c. bottles; and as capsules in bottles containing 50 and 250.

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# Virginia MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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March 1945

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## *Guest Editorial*

### A Health Officer's View on the National Medical Care Program

WHAT is being said today about a National Medical Care Program seems to differ in only one respect from that which was heard 10 years ago. The statements are now more in detail and coming from more individuals. The fact that more people are willing to express their views on the subject is a wholesome trend. Unfortunately, however, too few have actually studied the various proposals. What is more significant is the fact that the objections voiced by the majority are not accompanied by practical suggestions or constructive criticism.

It would be presumptuous on our part to attempt a solution for a program which involves the scope of activity such as has been proposed in the numerous legislative proposals. The most that can be expected of any one individual interested in a National Medical Care Program is to request those who are selected to pass upon the practicality of this necessary undertaking, to bear in mind certain basic facts which are of concern to both lay and professional groups.

It is our impression that the discussion to date has been limited to but a fraction of the problem facing this nation. Furthermore, that for the most part the members of our Association are discussing it too much from their own point of view. It would be interesting to determine the unbiased feeling of the millions whose destinies in this instance we are attempting to guide.

Without any attempt to elaborate, certain facts are obvious.

- (1) The subject deals with the very existence of one hundred and thirty-five million people who are now living and will continue to live under varying conditions, in both rural and urban communities. Therefore, any agreement reached in order to satisfy the necessary requirements of all must not be made to the exclusion of any, or to the benefit of a few.
- (2) A large portion of our population finds difficulty in procuring proper medical and hospital care. This is true because too frequently the services and facilities are not available or uniformly distributed. Also, because too many individuals are too poor to buy this medical care.
- (3) The needs are greatest in rural communities. This fact is frequently overlooked in discussing a nation-wide program.
- (4) To date, private efforts to provide adequate hospitalization at minimum cost, and based on sound insurance principles have been successful more or less to protect less than 15 per cent of the nation's population. At this rate, it would take at least 50 years to provide coverage for all, assuming, of course, that there could be complete elimination of all medical and social indigents and that there would be a provision of 100 per cent employment. To expect such patience on the part of an ever growing, and an ever more intelligent population, appears to us to be wishful thinking.
- (5) Blue prints of existing Medical Care Programs in other countries are available (they do not have to be followed). Many of these planned programs

have failed to meet expectancy, because emphasis was placed completely on curative medicine. Ignoring the importance of preventive medicine today, in view of its rapid development since the turn of this century, will fail to meet the essential requirements. It is sincerely hoped that any plan which may be eventually adopted in this country will take complete cognizance of this specialty.

- (6) Sound business practice thrives on good administration. Whether we like to admit it or not, any feasible plan will be a big business and therefore must be based on a good administrative practice.
- (7) Federal assistance in a large program such as is being contemplated and which a large majority of the citizens is demanding, must be expected to equalize the overall financial burden. This will be necessary in order to assist those communities less fortunate than others. The experience with federal assistance to date in public health programs sponsored by the United States Public Health Service is to be commended. The assistance which has been given has had no strings attached to it. No State or Local Health Officer would tolerate federal assistance which would interfere with local planning.
- (8) The most skeptical physician will agree that the medical profession is continually interested in research. This must never be discouraged. What better proof do we have of federal assistance in this respect than to review the activities of the United States Public Health Service from the time of Dr. Gorgas? We as physicians and as Public Health Officers must accept this fact and cooperate.

Some four or five years ago a National Physicians Committee was created. What is more essential is that all local and State societies affiliated with our official National Organizations strive to accomplish our objectives. A carefully selected membership for a National Research Committee will do much to maintain our professional integrity.

- (9) Some ten years ago a County Medical Care Program was begun in Canada immediately across the Detroit River. Would it not be advantageous to analyze both its failure and success? In the State of Washington a state-wide program is being conducted and has been for the last three years. Should not the experience gained there be analyzed critically? In other words, let us forego a defensive attitude and resolve to undertake an offensive point of view immediately.

As physicians, our interest is sympathetic to all persons in need of medical care. They must be assisted and cared for. Further, we must be conscious of our privileges and respect the confidence placed in our judgment by mankind.

Health officers are concerned with providing a wholesome environment and the maintenance of high standards of public health: to undertake to pass and enforce public ordinances that will provide the greatest health benefits to the majority; to so direct our staffs as to permit a lengthening of the life span and to assist in a program whereby each individual will live a complete and normal health life.

We cannot live in the past, we must face the future. We must give leadership to an ever changing world. Let us strive to make our world a better place in which to live, based on justice, but not at the expense of eliminating initiative.

JACK B. PORTERFIELD, M.D.,  
*Director of Public Health,  
City of Richmond, Virginia.*

## NARCOSYNTHESIS AND HYPNOTISM\*

ADDISON M. DUVAL, M.D.,  
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Your Commanding Officer has requested this lecture today on narcosynthesis and hypnotism. I shall take the liberty of making the first named the central theme of discussion, because so much interest has been stimulated in this type of therapy in World War II. It has also interested me more than hypnotism.

"Narcosynthesis" is a term coined by Grinker and Spiegel of the Medical Department, U. S. Army Air Forces, to describe a method of synthesizing or re-integrating the personality factors in patients suffering from the neuroses of war. In a practical way it utilizes the effects of small doses of intravenous sodium pentothal or sodium amytal to assist in psychotherapy.

In order that you may more clearly understand this procedure I would like to give you a simple explanation of the psychological mechanisms used by the normal as well as the abnormal individual and then briefly outline the history of the development of narcosis or sleep treatment for the mentally ill.

Let us first discuss some of the basic concepts concerning the functioning of the so-called normal mind, as well as the abnormal. My approach will be as simple as possible, and I hope you will pardon any over-simplification. One of my students recently said to me following my lecture on the development of mental illness: "Doctor, I have always understood that psychiatry was a very difficult and involved subject, but it all seems very simple to me." It would appear that I certainly made the problem appear too simple on that particular day.

Mental diseases are usually classified into two types—organic mental illness and functional mental illness. This is probably not the best division, but it will suffice for our purpose today.

Organic mental illness is due to active demonstrable pathology in the central nervous system, such as we find in dementia paralytica, psychosis due to brain tumor, psychosis with cerebral arteriosclerosis or traumatic psychosis. The general practitioner has

no particular difficulty with this concept, because it is his usual concept of the development of all or most physical diseases and he is not surprised that there should be interference with mental function if there is interference in brain function, and he clearly understands why the mental illness is treated by treating its basic etiology. As this concept of organic mental illness is easy to understand we will pass on to the second and more difficult group of mental illnesses.

Functional mental illness is that type of disorder of the mind developing without any known organic etiology, and we might just as well have named this group "psychosis without organic disease"—psychosis, of course, meaning mental illness. The physician not trained in psychiatry usually has great difficulty in understanding how these mental illnesses develop, for mental illness without organic disease seems to him somewhat fantastic, mystical and difficult to comprehend, and the psychological approach seems very involved, as it does not follow his usual concept of physical illness. Let us, therefore, discuss now some of these psychological factors involved in the development of functional illness of the mind.

The concept of "mind" is often vague, indefinite and ill-defined. There are many definitions. In thinking of "mind" we think of "brain", but certainly these two are not synonymous, for the brain has physical qualities, so that we can see it, feel it, weigh it, cut it and study it through various other physical means. We cannot do this with the mind, so that mind is more than brain, more even than the total of all our body organs, and its definition must include that something which we call life, spirit or soul. Each person, as he develops, gradually becomes aware that he is an individual and is not a part of his environment. He begins to understand that he is a separate entity, that he functions as a unit, even though he is quite dependent on and much influenced by his environment. Such a person, so constructed, is said to have personality. While mind and personality are not identical, we can today use the same definition for each, and say that mind is the individual in action, and, consequently, not static but always changing. In order to study mind, there-

\*Presented to the medical staff of the Fort George G. Meade Station Hospital on May 12, 1944, under the auspices of War-Time Graduate Medical Meetings.



fore, we must study the individual at the anatomical, physiological, neurological and psychological levels, together with all factors bearing on the life of the individual. These would include hereditary factors, constitutional factors and environmental factors, and a study of the developing individual from infancy to childhood to adulthood. Such a survey would give us what we term the longitudinal status, while a detailed survey of the individual's mental and physical condition at the time of our examination for possible personality defects would give us what we term the cross-section status.

We are all aware that we live in a rather rigid social environment. We soon learn that we cannot have all we wish, that we cannot take from others what we desire, that we cannot act and live as we prefer, and that we cannot satisfy all our instincts and desires as they occur. These may be impossible because the rules of society prevent such consummation. In addition, because of an individual's instruction and teachings he begins to realize that some of these things he so much desires are not considered proper or acceptable by society and he may begin to criticize himself for having such wishes. In this way a conflict situation is set up between his wishes and his conscience. If this situation progresses, more important emotional difficulties may result.

Mental growth is dependent on increasing possibility of adaptation between the individual and his environment and such adaptation is accompanied by stress and strain. The adaptational factors vary in intensity in different individuals and in different situations.

There are two causes for the development of emotional difficulties. The first of these may be said to be due to maladjustment within the personality of the individual and the second due to difficulties arising from environmental factors. We have previously mentioned that a conflict situation may develop within the individual because his desires are not acceptable to his conscience or to society. I would like to outline to you another conflict situation. Each normal person at one time or another has feelings of inferiority. If the individual does not realize that this is normal he begins to be alarmed by such feeling, and unless this fear is overcome at once this individual will become uneasy, tense, retiring and will lack confidence in himself. He will begin to doubt his own capacities and his work and good adaptation will usually suffer. A fertile field for the

development of mental illness is thus prepared.

The other source of difficulty is the environment, which can sometimes be quite brutal in its effects. We are all aware of the personal difficulties and terrific emotional upheavals which may arise from such factors as loss of home, loss of finances, loss of father, mother, sister, wife, child, and the loss thereby of part of one's own emotional security. We all know the threat to security from environmental factors, especially seen in time of war, and in many this is not only a threat, but a fact, and these difficulties at times seem insoluble and insurmountable.

At this stage of our consideration it seems to me we should say that whether in peace or in war functional mental illness is determined by the degree of adaptational stress and by the degree of vulnerability of the personality.

I have previously referred to the "normal" person. Who is normal? Does the normal person function expertly and precisely without emotional difficulties? Does he give 100 per cent efficiency in the functioning of his personality? Our answer must be in the negative, as it seems to me that each person who considers himself normal must readily admit of emotional difficulties at one time or another. We must, therefore, refer to the normal as the average, and realize that each normal person has his assets, but also his liabilities, and that no one is mentally perfect. Where is the dividing line between the normal and the milder form of mental illness which we have labeled psychoneurosis?

If the individual, with his good points and weak points, meets a difficult environment, we have seen that certain conflicts, stresses and strains develop. Each of us has had such experiences from time to time in our life adjustment. If we meet the difficult environment squarely, make the necessary adjustments, either in ourselves or in the environment, and proceed with our lives, we have made self-adjustment and we have usually gained in mental growth by such adaptation. If those stresses and strains cannot be allayed through selfadjustment several different types of reaction may ensue. In one instance the individual may develop feelings of inferiority, retire within himself, lose spontaneity and cheerfulness, and gradually develop a feeling of failure, of frustration, of hopelessness and this may suddenly be followed by a suicidal attempt. Where in this course of development did the mental illness begin? In another instance the individual may be

criticized for personal defects or failures in duty or work and gradually develop the need for protection against criticism. This is followed by the placing on others of complete responsibility for his failure. Then comes the conclusion that people are working against him and then he begins to hear criticizing imaginary voices and the plot against him now seems fully developed. Where in this course of events did mental illness begin? In still another instance the over-protected son who has never learned to assume his personal responsibilities in life is taken from his sheltered home into the new and entirely strange surroundings of the recruit training center. Homesickness begets inefficiency, inefficiency begets criticism and criticism begets more homesickness. The situation becomes psychologically unendurable and it is little wonder that this individual suddenly one day develops a stuporous state on the drill field or in his barracks, as a protective device. Where did mental illness begin in this course of events?

In any of these cited instances where the individual has developed mental conflicts several means of attempted solution of these conflict situations should be described and any one or several of these may be used by the same individual at one time or another.

The first way in which an attempt to dissolve the conflict situation may be made by either normal or abnormal is by forcefully putting the conflict out of consciousness, in an attempt to blot out or deny its existence. This may be called active forgetting or repression. These memories may not be fully blotted out, however, but may try to come back into consciousness, and because they are still painful to the individual the process of "active forgetting" is again utilized but the individual at the time may show the results of such continued conflict by feelings of tension or anxiety. These troublesome memories may eventually return to give more difficulty in the form of physical symptoms, such as headaches, tension states, compulsive behavior, somatic complaints and the conditions known as hysterical paralyses, anesthesias, tics, aphonias, and the like. (It is, of course, understood that the patient is not aware of this mechanism.) In other words, the emotional conflicts have become camouflaged and converted into physical symptoms. Such physical symptoms which are engendered by emotional conflict are receiving a great deal of attention in modern medicine under the title of psychosomatic disorders. It has been estimated

that from 40 to 60 per cent of all patients coming to hospital dispensaries are suffering from these sorts of complaints, rather than from actual physical disease.

Mental mechanisms other than repression which individuals may use in dealing with conflict situations include regression and projection. In regression the individual's behavior and attitude turn backward in his life process to the attitudes and behavior which we consider normal for infancy or childhood. Such individuals become quite dependent on others; they love the attention of others; they lose their individual drives and ambitions; their behavior becomes more childlike and simple and in the extreme such patients have to be fed and bathed like infants, and in one case of mine the patient actually assumed a fetal attitude for a number of months. Such a reaction is, of course, an obvious protective mechanism utilized in the face of an unbearable emotionable situation.

In the mechanism of projection the individual attempts to protect his own integrity and personal security by placing complete blame for his own shortcomings on people about him. He is never at fault; the responsibility for failure rests on the other fellow. As his situation increases in complexity additional psychological protection becomes necessary, so that the individual then begins to believe that he is subject to the ire and machinations of people about him. This attempt at self-protection may even be carried to the extreme where the individual believes that he is the center of the universe, and even Christ or God.

Other types of mental mechanisms could be described in detail if time permitted. I do want to say a little more about the emotion fear. This is one of the primary or basic emotions and is a protective device to the individual, physiologically preparing him for flight in the face of danger. This is in contra-distinction to the emotion of anger, which, when felt by the individual, prepares him physiologically to destroy the threat to his security. Many individuals are much distressed when they feel fear, and they become afraid of fear, feeling that they must be yellow or a coward to have such emotion. We know that every human being experiences fear, and if we could but learn that we should not be afraid of fear, much emotional distress could be avoided. Many of our boys in combat have developed emotional illnesses largely based on these



premises and after they learn, through instruction, through experience, or even through narcosynthesis, that they are not cowards because they have experienced fear, their fear of fear or anxiety is immediately dissolved and they may again become stable combat soldiers. The bravest soldier is the one who experiences terrific fear but still goes over the top and performs his assigned duties.

Various anesthetic or hypnotic drugs have been used for many years in the treatment of the mentally ill. Griesinger, in 1882, described the beneficial result of treatment following deep sleep. In 1900 Ragg and McLeod reported on the use of bromides, and Wolff in 1901 reported on trional. Starkey used light ether hypnosis, Newman used intravenous alcohol, Baernstein used scopolamine, Hoff and Kauders used paraldehyde and medinal; and chloroform, morphine and other drugs were also tried.

With the development of the newer barbiturates, nembutal, evipal, sodium amytal and sodium pentothal were found to be quite efficacious in producing sleep. The *British Medical Journal* reports that Dr. Broome, of Oldham, England, was the first physician (date not given) to use the method of intravenous barbiturate injection for psycho-therapeutic purposes. In 1936, J. S. Horsley, of England, used the term "narco-analysis" to describe this procedure, using nembutal, amytal and pentothal as these drugs were developed. Horsley used small doses of these drugs intravenously to produce a state of relaxation with heightened suggestibility, and in this state the patient could discuss more freely his mental conflicts. Muteness, waxy flexibility and acute depression seemed to disappear temporarily under the influence of the drugs. These barbiturates were principally indicated because of their selective action on the brain stem, their non-toxic qualities, and the ease of production of a narcotic state in which the drug apparently acted in an anti-inhibitory way, as a result of apparent depression of the inhibitors.

In America, Bleckwenn, 1930, reported very good results in treating mental illness with sodium amytal. Palmer and Braceland, from 1930 to 1936, set up a standard technique of prolonged narcosis with sodium amytal at the Pennsylvania Hospital. Broder reported an abridged method with sodium amytal, Thorner reported results, especially in catatonia, and more recently Wilde and Sargent, of England, re-

port success with temporary narcosis in the treatment of the war neuroses.

Two types of treatment with intravenous barbiturates gradually evolved. The first of these—prolonged narcosis—consisted in keeping the patient asleep for 15 or 20 hours daily for a varying period of from 5 to 20 days. During the waking periods—twice daily—the patient was found to be more quiet and relaxed and was in better contact with reality, so that his emotional problems could be discussed with him more successfully.

The second type of treatment, temporary narcosis, consisted in giving the patient small doses of intravenous barbiturates, not sufficient to produce sleep but causing the patient to be more suggestible, to lose his inhibitions, and in this state he was able to talk clearly about his emotional conflicts and memories, which in the waking state were possibly repressed from consciousness.

In 1933 we began to utilize both methods of therapy at St. Elizabeths Hospital, but temporary narcosis was used much more frequently for the reasons that it was easier, simpler, required less time and personnel, complications were entirely absent, and we also had a greater number of patients in which this type of therapy seemed indicated.

During the Tunisian campaign from January to May, 1943, Grinker and Spiegel used various types of treatment for the war neuroses encountered in North Africa in both British and American troops. One type of treatment was the intravenous injection of sodium pentothal to induce a semi-narcosed state, during which the patient is able to live through his traumatic battle experience, thereby releasing intense repressed emotions and permitting the personality to become more stable and better integrated under the guiding hand of the psychotherapist. This technique the authors called narcosynthesis. With some possible variations it seems to have been essentially the same technique as Horsley's narco-analysis and the psychotherapeutic interviews with intravenous barbiturates of many other workers in this field. No credit should be withheld from Grinker and Spiegel because of this, as they appear to have been among the first Americans to use the treatment in the forward military areas where it seems so especially indicated. These authors feel that this treatment "is immediately indicated in all cases of the severe anxiety states associated with mutism, stupor, regressive somatic manifestations, regressive (psycho-



sis-like) psychological manifestations, and amnesia." They also feel that sodium pentothal is to be preferred over sodium amytal, due to its shorter period of effect and the absence of drowsiness or sleep which usually continues after interview with sodium amytal. For this reason the patient can carry over from the narcotic state to the normal waking state with no interference in the stream of consciousness which, if allowed, might permit more easily of repression of the troublesome emotions with resultant loss of the re-integrative effort already made. Grinker and Spiegel report dramatic improvement, so that "the stuporous become alert, the mute can talk, the deaf can hear, the (hysterical) paralyzed can move, and the terror-stricken psychotics become well-organized individuals."

As St. Elizabeths Hospital has always been used for the treatment of military cases we admit a large number of young men from the ages of 17 to 25 with acute mental breakdowns. Many of these men have been unable to adjust in military life and have developed marked guilt reactions based on failure or fear of failure, tension, anxiety and derogatory hallucinations. These reactions often develop into stupor states of varying degree. We found that in such stupors, usually diagnosed as catatonia, small doses of intravenous sodium amytal would permit the patient to begin talking with the physician in quite a rational manner. Conflicts, worries, anxieties, doubts, loves, hates, feelings of frustration and guilt and many other emotions were readily discussed. The facts of the patient's illness could be clearly explained to him, his fears allayed, his suspicions dissolved and through development of the patient's confidence in the physician much of the basic ground work of rebuilding or re-integrating the patient's shattered personality into an efficient working unit could be accomplished. These therapeutic interviews were given as often as indicated—usually never more than one a day. Sometimes one treatment was sufficient to prevent further stupor with accompanying muteness, sometimes several were required; and occasionally we met with total failure with either one or several treatments.

The technique of this procedure is relatively simple: The patient is placed in bed in a single room, away from any noise or commotion. A  $7\frac{1}{2}$  grain sodium amytal ampoule is prepared in a total amount of 10 cc. for intravenous use and injected into the antecubital vein at the rate of about 1 cc. per min-

ute. In the mute, stuporous patient we watch for such signs as flushing of the face, opening of the eyes, moistening of the lips, or body tension. The dosage to this point varies from about two grains to  $7\frac{1}{2}$  grains, and in rare cases will not be reached until 15 grains have been given. On noticing these signs the injection is stopped momentarily and attempts are made to rouse the patient by speaking to him, moving his hands or directing him to answer questions. Often the patient will act as if he is awakening from a sleep and without difficulty will proceed to answer direct questions and then will readily discuss his emotional difficulties. If this reaction should not occur the injection of the drug is continued slowly and the procedure of stimulation to talk is repeated. If the patient begins to get more stuporous the treatment has been a failure and no further injection of drug is indicated until another occasion. After successful therapeutic interview of from 20 to 60 minutes the patient will become drowsy and unless further aroused will sleep for about an hour. No complications have been encountered in this procedure and these "stimulations" may be given on successive days if indicated.

The use of this treatment technique has not been limited to cases of stupor, but has been used successfully in cases of hysterical paralysis, tremors and amnesia and in anxiety states. In these conditions the patient is given enough of the drug to produce relaxation and obvious drowsiness. The eyes often remain closed during the entire interview except for the period of most acute anxiety expression. No patients in our series have become disturbed, uncooperative or unmanageable during the treatment.

Since the beginning of World War II we have also used the technique in treating various types of the neuroses of war, with very beneficial results.

I would like to tell you briefly of several rather typical illustrative cases in which intravenous sodium amytal proved beneficial.

A 19-year-old Marine Corps private with two years' service was admitted to St. Elizabeths Hospital in December, 1943. He had developed acute anxiety while on Guadalcanal from November, 1942, to February, 1943, but succeeded in preventing his condition being known to anyone until after his admission to the hospital for recurrent malaria in October, 1943. On admission to St. Elizabeths Hospital he was tense, anxious and depressed, quite tremulous, and showed definite startle reaction. No

gross signs of psychosis were in evidence and he was cooperative, well oriented and showed no mental confusion. Fingernails were bitten and hands were moist and cold. His history revealed earlier truancy, together with a very bad home situation. The patient continued to have battle dreams and stated that he had an amnesia for a period on Guadalcanal of about nine days' duration immediately following strafing and bombing by enemy planes. He was fearful that he had been yellow or a coward, as he remembered running into the jungle. He was given temporary narcosis with sodium amytal and almost immediately began relating his experiences in getting into his foxhole during the bombing raid and then told of his running into the jungle, of his fear and apprehension, of how he found food to sustain himself and of his actions during the next few days until he rejoined his outfit. In this therapeutic interview it was repeatedly suggested to him that everyone experiences fear, that he should not be afraid of fear, and that he would recover his memory and become more stable emotionally after the treatment. On the following day the patient had forgotten some of the details of his previous amnesic period but was definitely more relaxed, less fearful and expressed his belief that he would recover. He received no other amytal injections and on April 5, 1944, he was discharged from the hospital, still showing symptoms of insecurity and lack of confidence in himself, but it was felt that he could return home and make a satisfactory adjustment there. This case was classified as a mixed psychoneurosis and illustrates the effect of environmental factors on a vulnerable personality.

A 21-year-old Marine with six days' service was admitted to St. Elizabeths Hospital in September, 1940, following an acute onset with agitation, excitement, incoherent talk and auditory hallucinations, followed by the development of stupor. On admission he talked very little, was obviously depressed, tense, apprehensive, was disoriented and thought that he should be killed. His talk was so fragmentary that he could give little detailed information about his past history or present condition. His condition varied from one of restless confusion to obvious stupor. He was given intravenous sodium amytal for a therapeutic interview with the psychiatrist and the patient's mother was present. He quickly became alert, his confusion disappeared and he began to sob and cry. He stated that he

felt that he was under criminal charges, thought he was to be killed or that his body would be placed on a block and he would be beaten with mallets until his body was a mass of human pulp, but he would live and suffer through this ordeal in penalty for his failure in the Marine Corps. After he was allowed to express his feelings completely he was then told of the real facts of his illness, where he was, how he got to the hospital, and that he was having a mental illness, from which he would recover. He also had a very satisfactory talk with his mother. This patient relapsed into his stuporous state on the following day, but soon showed gradual definite improvement and made a full recovery. His case was classified as dementia precox (schizophrenia), catatonic type.

A 42-year-old retired Signalman, United States Navy, was admitted to St. Elizabeths Hospital in March, 1944, with a history that he had had syphilitic many years ago and recently became much worried, had many somatic complaints, and felt that his condition was due to syphilis of the spine. A few weeks prior to admission he had developed gross jerking of the head, neck and upper trunk in rhythmical fashion. Attention directed to his body markedly increased these jerking movements. No evidence of psychosis could be found, nor could any physical cause for these muscular movements be found. When given intravenous sodium amytal for temporary narcosis he became quickly relaxed and all the muscular jerkings ceased. While under the influence of amytal his personal difficulties were discussed at length and he revealed that he had recently been living with a woman as man and wife and that he had gradually become impotent. This had made him worried and anxious and in searching for the cause he began to believe that the cause was syphilis of the spine. He was told definitely that he had no syphilis of the spine, that his body movements were on an emotional basis and that he very definitely would recover from this condition. Following this treatment he showed some slight return of the muscular movements and two additional treatments were necessary before they completely disappeared. His case was classified as psychoneurosis with obsessional and hysterical features.

Hypnotism is a special psychiatric treatment procedure and should be grouped with shock therapy,

narco-analysis, narcosynthesis, psychoanalysis or other exploratory psychotherapy.

The fact that individuals may be placed in a very suggestible state—the hypnotic trance—has been known for many years. Only in recent years has this procedure been further investigated and utilized as a psychotherapeutic tool in cases of mental illness and more particularly in that group known as the psychoneuroses. There has been a hesitancy on the part of many to use the treatment, because hypnotism was held in ill-repute for many years, due to its use by charlatans and quacks. In the hands of experienced workers psychotherapy with hypnotism seems to have given very favorable results in well-selected cases, and more and more interest is being centered on it, as well-known workers in the field report its successful use. The success of this procedure is based solely on the fact that it is a means for psychotherapy.

#### SUMMARY

An attempt has been made to give you certain simple basic concepts concerning the development of functional mental disorders. Some of the mental mechanisms or mental gymnastics have been briefly discussed and illustrative cases, principally utilizing these mechanisms in the developing mental illness, have been presented. The history of the development of the sleep treatment or narcosis therapy has been briefly given, with special attention directed to psychotherapy in association with the use of small doses of intravenous barbiturates, called narcosynthesis by Grinker and Spiegel. Reference has been made to similar procedures developed by other workers in the field. Specific technique has been described and clinical illustrative cases presented briefly. Remarks have been made concerning the use of hypnotism as a special treatment procedure.

In conclusion, we may say that temporary narcosis with sodium amytal or sodium pentothal can be a very valuable therapeutic tool when used with psychotherapy, but that it is not a cure when used by itself as medication. We must never forget that we should always treat the patient and not the disease.

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## RADIATION AND NEUROSURGERY IN ADVANCED CANCER\*

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and

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In the relief of recurrent and metastatic cancer, cooperation between the general practitioner and a number of specialists is usually necessary, and in many instances much can be accomplished. For best results, real team work is necessary. In the first place, it is up to the general practitioner to organize the team by calling in the specialists. And, in the second place, it is up to each specialist, not just to do his share, but to keep himself informed in a general way of the activities of other specialists so that he will know when additional help can be obtained and where to obtain it. Almost always, the services of the home physician, a surgeon, a pathologist, and a radiologist are necessary. Frequently an orthopedist and a neurosurgeon are needed too.

Once it has become apparent that cancer cannot be cured, there is an unfortunate tendency to lose interest, to overlook or neglect measures which may prolong active life and prevent suffering. Not all the members of the medical profession appreciate fully what can be done in the radiation of late cancer. Not long ago, during a campaign to raise funds for cancer control in another state, a doctor remarked that so far as he was concerned, when a patient of his developed recurrent or metastatic cancer, the only honest advice he could give him was to jump in the nearest lake. Such an attitude is, to say the least, unduly pessimistic. Many cancers that cannot be cured can be successfully controlled for very worth-while periods of time. And even when the progress of the disease cannot be checked, it is often possible to alleviate pain by other means than narcotics. Since radiation is the most useful single agent in the treatment of advanced cancer, almost every patient should receive roentgenological consultation. No patient, no matter how desperate the situation appears, should be abandoned to narcosis without careful evaluation by a surgeon, roentgenologist and pathologist. We still do not know enough about cancer to predict with certainty which tumors can be controlled. Percentage figures do not

apply to the individual. Whether the cancer can be controlled or not, if only relief of pain can be obtained, radiation is well worth while. Relief is more complete and lasting than that provided by narcotics, and the undesirable side effects of radiation are usually temporary, whereas narcotics quickly lead to addiction, poor nutrition, and personality changes. If there is any hope of amelioration, radiation should be employed. Many times good and sometimes startling results follow.

To cite illustrative case histories:

*Case I.* A 65-year-old man had lymphosarcoma of the left antrum and orbit with prominence of the eye and impairment of vision. The tumor receded promptly under radiation with correction of the proptosis and restoration of vision. Four months later, after a severe gastric hemorrhage, x-ray examination revealed polypoid tumors in the stomach. On a presumptive diagnosis of lymphosarcoma, the stomach was radiated, and, in four weeks, check examination showed complete regression of the tumor. A year later recurrences appeared in both the face and stomach and the patient died of gastric hemorrhage.

Comment: In this instance control of the tumor was rather brief. But though only sixteen months of active life was given this patient, proptosis of the left eye was corrected, and its vision saved. More important, the pain and horror of destruction of the face was prevented.

*Case II.* Over four years ago, a 14-year-old girl presented herself for treatment of an endothelial myeloma of the left acromium. The shoulder was very painful, and there were multiple pulmonary metastases. Radiation of shoulder and chest was followed by rapid relief of pain and complete regression of the primary tumor and the pulmonary metastases. Radiation of recurrences and new metastases was necessary only three times in the next four years, but now the tumor is rapidly getting out of control.

Comment: During the four years in which this patient responded to radiation, she suffered for only brief periods and led a more normal unrestricted life

\*Read before the annual meeting of the Medical Society of Virginia, at Richmond, October 23-25, 1944.

than do most persons in her age period who have diabetes or rheumatic heart disease. The latter are certainly preferable to endothelial myeloma, but if this patient had not received radiation, she would not have experienced four years of happy active life.

*Case III.* This is the most remarkable case history in our records. Over twelve years ago, a 6-year-old girl was seen because of rapid weight loss and a tumor of the right anterior chest wall of three months' duration. X-rays showed a sarcoma in the right seventh rib, and the lungs riddled with metastases. A biopsy, later reviewed by Dr. Ewing, was reported "atypical Ewing's tumor".

Pulmonary involvement was so massive that she was considered beyond help and sent home without treatment. Ten weeks later, she returned, cachectic, cyanotic, literally in extremis. Hating to dismiss the frantic parents without doing anything, we gave the entire thorax 600 r units on two successive days and sent the child home to die. To our utter astonishment, she walked into the hospital five weeks later, a vigorous, healthy girl with no evidence of tumor anywhere. Two more x-ray treatments of 600 r were then given.

This patient, over twelve years later, is today a perfectly normal young woman and happily married. There has never been a recurrence.

*Comment:* Here, the effect of radiation was really miraculous. We do not present the case with the suggestion that this result can be repeated, but only as proof that no one can anticipate the response of a radio-sensitive tumor to x-ray.

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Pathological fracture is a frequent and often unavoidable complication of bone metastases. The possibility of this complication must be kept constantly in mind by all physicians concerned with the case, though it is primarily the roentgenologist's responsibility carefully to study bone metastases and to call for orthopedic consultation whenever danger arises. Caution in the use and handling of weakened parts and the application of supporting braces can do much to prevent fractures of the extremities and crushing deformities of the spine. Radiation often causes actual regeneration of destroyed bone. Pathological fractures are usually extremely painful and greatly increase the always difficult nursing problem in late cancer. Frequent check-up examinations and prompt action could reduce the incidence of pathological fracture.

*Case IV.* For example, a 32-year-old woman had a radical mastectomy, post-operative radiation, and surgical sterilization because of a carcinoma of the right breast with axillary metastases. In spite of all this, fifteen months later, right hip pain developed, and x-rays revealed destructive metastases in the right acetabulum. Danger of pathological fracture was great. Radiation was started immediately. She was put to bed and both patient and nurses were warned to use care in the handling of the right leg. Pain relief was provided in a very few days. Gradual bone regeneration followed and she was allowed to resume her activities as the bone strengthened. Three months after radiation, the large defect was completely filled in. Since that time, the patient has received additional radiation for several rib metastases.

*Comment:* The outlook here is bad, but, so far, pain relief has been good, and the patient is still leading an active life, a year and eight months after axillary metastases were found. The important point is that she was not allowed to become incapacitated by a pathological fracture of the pelvis.

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Persistent pain in a patient with a known malignant neoplasm should be regarded as evidence of metastasis, whether or not the diagnosis can be confirmed by roentgenographic evidence. Pain due to metastases frequently precedes demonstrable changes. X-radiation at this point alleviates suffering and prevents deformity due to bone destruction. Waiting to radiate until destruction has taken place simply prolongs the period of suffering for the patient and increases the chances of deformity and pathological fracture.

*Case V.* A 40-year-old woman had a radical mastectomy, post-operative radiation, and radiation sterilization for a carcinoma of the left breast with axillary metastases. Three and a half years of normal existence followed. Then severe constant pain appeared in the left elbow. X-rays showed slight decalcification in the lower end of the humerus. Radiation was given at once without waiting for definite bone destruction, on a presumptive diagnosis of metastasis. Relief was prompt and permanent, and was followed by another two and a half years of health. At the end of this time, six years after mastectomy, the lungs abruptly developed innumerable metastases and death occurred in a few weeks.



We had never had occasion to regret radiation for pain in a patient with known cancer before bone destruction could be demonstrated. There is no excuse for delay, as the dosage required produces no harmful effects. On the other hand, we have had occasion to regret not radiating painful areas promptly in such cases.

*Case VI.* For example, another lady who had a carcinoma of the breast with axillary metastases also received a radical mastectomy, post-operative radiation, and x-ray sterilization. This treatment was followed by three and a half years of good health. She then developed low lumbar pain, but x-ray examination was negative for metastases. Her physician then decided she must have arthritis, and a hunt for foci of infection was started. This was nine years ago, and we did not insist upon radiation, as we now would. Within three weeks the pain had become rapidly worse, and we then did insist upon radiation, though x-ray examination was still negative. Relief was prompt and complete. Two months later, the patient was back with pain in the upper lumbar and cervical region. On this occasion, bone metastases were found in several vertebrae but the lumbar spine was still negative.

Comment: There can be little doubt but that the lower lumbar pain had been due to metastases, the progress of which was aborted by radiation before bone destruction appeared. The patient could have been saved three weeks of excruciating pain. This would have meant a great deal to her, particularly in view of the fact that she had, as it turned out, less than a year to live.

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It is not within the scope of this paper to go into the effects of the secretions of the sex glands on cancer. But we should like to point out that in the general enthusiasm over the success of surgical castration in some cases of carcinoma of the prostate, there has been a tendency to forget that radiation often provides relief of pain from bone metastases due to carcinoma of the prostate too. Both castration and radiation are palliative, not curative, measures. When pain persists or returns after castration, radiation should be tried.

*Case VII.* As an example, we present the history of a 55-year-old gentleman who was found to have a carcinoma of the prostate with pelvic metastases. Bilateral orchidectomy was followed by freedom from pain and good health for a year. Pain

in the right hip then recurred. A course of stilbesterol provided five months of perfect comfort. When pain again began, x-ray therapy produced relief for four months. Next stilbesterol was used effectively for six months. At this point, radiation provided complete relief for two more months. Then metastases appeared in the lower dorsal spine, accompanied by back and girdle pain, the latter probably from nerve root pressure due to slight compression of the diseased vertebrae. Radiation and an orthopedic brace kept this patient active for two more months. Multiple metastases then appeared, and death took place in a few weeks, two and a half years after orchidectomy.

Comment: This patient, a prominent lawyer, carried on an unusually large and strenuous practice for two years after painful bone metastases had developed. He was an invalid for the last six months, but except for the terminal two or three weeks, severe pain had to be endured for only a few days at a time, due to the combined efforts of his internist, urologist, orthopedist, and radiologist.

While on the subject of castration, it might not be out of place to point out that the success of this measure in carcinoma of the prostate offers indirect support to those who advocate castration for carcinoma of the breast. We have done so for many years, and are fortunate enough to have one remarkable case history which is difficult to disregard.

*Case VIII.* A 30-year-old housewife noticed a hard lump above the left clavicle which her physician removed for pathological diagnosis. The report was "highly malignant carcinoma metastatic to a lymph node", and she was referred for treatment one week later. Beneath the supra-clavicular scar, there was already an area of stony hard infiltration ten by three cm. in size; there was a movable hard mass five cm. in diameter over the outer edge of the left pectoral muscle; there was a three and a half cm. mass in the left breast substance below the nipple, and a two and a half cm. in the left axilla. Following radiation sterilization, she was sent home for a few days' rest before undertaking a course of radiation to the local areas. She was unable to return until eight weeks later. With the exception of the axillary mass, all the tumors had completely disappeared. Further radiation was therefore withheld. This amazing regression persisted for one year. Then and two years later, recurrences in the breast area were radiated. Today, over six years



since she was sterilized, this patient has no evidence of cancer anywhere and is in perfect health.

Comment: Admittedly, the effect of castration cannot be predicted in the individual case, and castration is perhaps a radical measure to force on a young woman who desires children. Certainly women who have had their families or who are near the menopause have everything to gain and little to lose by taking this step. Whether radiation or surgical castration is preferable, and if the latter, whether castration should be done after the menopause as well as before, are questions on which we have nothing to contribute.

\* \* \*

In the fight against pain due to advanced cancer, the contribution that the neurosurgeon can make is extremely valuable, a fact which is sometimes overlooked. The relief afforded by alcohol injections of nerves, section of sensory roots, and chordotomies is dramatic. Chordotomy seems to be displacing root sections except of the cranial nerves, and section of the spinothalamic tract in the mesencephalon is being successfully performed to produce hemi-analgesia. But what procedure should be undertaken is a concern of the neurosurgeon. The important thing is for those handling cancer to keep the neurosurgeon in mind, and to get his advice as soon as it becomes apparent that other surgery and radiation are not going to be effective. Besides a large number of nerve injections, our Department of Neurosurgery has performed 43 chordotomies for relief of pain in the past three years. There were 35 patients, some having more than one chordotomy. There were two deaths, giving a 6 per cent operative mortality. In general, it can be said that upper thoracic chordotomy is a very dependable procedure. Failure to relieve pain is usually due to incomplete section of the spinothalamic tract, but it is easy to go back and do a deeper section. Relief of trigeminal pain is usually very successful. Relief of upper thoracic pain and pain in the upper extremities is not as uniform, but some excellent results have been achieved.

When considering the advisability of neurosurgery, the possibility of undesirable results must be weighed. Loss of sensation, loss of sphincter control, and other paralyses must be risked. As a practical rule, the pain should be more difficult to live with than the possible complications. Obviously a patient who has only a few more weeks to live should not be subjected to surgery of a fairly radical nature,

nor should a poor operative risk whose pain can be controlled by small doses of opiate undergo the hazard of surgery. Often the decision is a difficult one but it would seem preferable in doubtful cases to proceed with operation for there is so much to be gained and comparatively little to be lost.

To illustrate the usefulness of neurosurgery, two cases are cited:

*Case IX.* A 25-year-old woman was admitted for treatment of a left facial tumor of eight years' duration. During this time, the tumor, a chondromyxosarcoma, had been removed three times by different surgeons, and each time recurrence was prompt.

A radical resection was done, the left hard palate, floor of the left orbit, the left maxillary sinus and zygomatic arch all being sacrificed. The result was no better. Three months later she had a definite recurrence, and for the first time, was suffering severe pain in what remained of the left side of the face.

She was in excellent condition, and from the previous history, there was every reason to believe that she had years of life before her. The sensory roots of the left fifth cranial nerve were therefore divided, with immediate relief from pain. This was three months ago, and so far, in spite of persistent tumor, she has had no further discomfort.

*Case X.* A 58-year-old man, complaining of gastric distress, was found, on x-ray examination, to have a prepyloric carcinoma, for which a subtotal gastrectomy was done. Every effort was made to remove the regional lymph glands, to several of which the tumor had metastasized. The immediate result was excellent and the patient remained well for two years and three months. Then after an automobile accident, a pathological fracture of the 8th dorsal vertebrae was found. While the patient was in a body cast and receiving x-ray therapy to his back, first an epigastric tumor, then jaundice appeared. The abdomen was reopened, and recurrent tumor found obstructing the common bile duct. A choledochoduodenostomy was successfully performed. Though the jaundice was relieved, in a few weeks intractable abdominal pain developed. Between periods of opiate-induced stupor, suffering was constant and severe. Yet it was obvious that the end was not yet at hand. At the level of the 2nd and 3rd dorsal vertebrae, both antero-lateral aspects of the cord were cut to a depth of four mm., produc-

ing analgesia to the upper abdominal level. The patient lived two more months. From a portion of a letter written by a member of his family soon after his death, you may judge whether the procedure was worth while:

"The results of the operation could not have been better. He had almost complete relief from pain and was mentally clear and physically comfortable right up to the end. He had no motor paralysis or loss of sphincter control at any time and was able to walk to his bath the day before he died."

#### CONCLUSIONS

1. A case of late cancer can seldom be handled to best advantage without close cooperation of a number of physicians.

2. The development of recurrent or metastatic cancer does not necessarily mean the end to useful happy life. An occasional cancer can be arrested indefinitely, some can be controlled for years or months, and many patients can be relieved of pain by radiation.

3. Destructive bone metastases call for caution in the use of the diseased part and, whenever necessary, orthopedic support in an effort to prevent pathological fracture. Radiation produces bone regeneration in many such metastases.

4. Persistent pain, even though metastases cannot be demonstrated roentgenologically, is an indication for radiation in patients with known cancer.

5. Radiation is still a valuable supplement to orchidectomy in metastatic carcinoma of the prostate.

6. The ability of the neurosurgeon to relieve pain in many cases of late cancer should be kept constantly in mind.

#### DISCUSSION

DR. JOHN M. MEREDITH, Richinond: It is always profitable to hear anything Dr. Cooper and Dr. Archer have to say, and I am sure we have all enjoyed their paper. Dr. Cooper has presented this morning cases that are very interesting. I remember the case of the twelve-year-old girl he cited in Charlottesville, which proved beyond a doubt the benefit to be obtained from irradiation.

It need not be emphasized that all patients with malignancy and metastatic lesions frequently require irradiation and other measures for the relief of pain.

Dr. Archer and Dr. Cooper were kind enough to send me a copy of their paper several days ago, and, in reading it over, it occurred to me that perhaps the most helpful contribution I could make would be to stress certain points about the surgical relief of these patients and to

emphasize that there are limitations in this as in everything else.

Patients with metastatic malignancy, though hopeless in so far as cure of the disease is concerned, should not be denied operative procedures for mitigation of the intense suffering so common where malignancy involves the cranial or spinal nerves.

Often the presence of bone metastasis in carcinoma of the prostate, ovaries, breast and other organs can be almost certainly proved inferentially by the finding of an elevated serum phosphatase and an accelerated blood-sedimentation rate, even in the absence of demonstrable radiologic evidence of metastatic disease. We have seen a number of such cases later proved by post-mortem examination or by subsequent x-ray films.

The intractable pain of metastatic malignancy arouses the sympathy of all physicians. Addiction to morphine is to be expected in such patients unless the pain can be relieved by other measures. We believe, and this point was stressed by Dr. Coleman last year in his Oration on Surgery at the annual meeting of the West Virginia State Medical Society, that, with rare exceptions, patients with metastatic disease should be informed of the nature and outlook of their disability before any major neurosurgical procedure is carried out. Unfortunately, too many such patients are not told that they have a malignant disease before chordotomy so that when pain is relieved by section of the spinothalamic tracts of the cord (chordotomy) and the carcinoma or sarcoma steadily progresses, involving, as it frequently does, motor nerves or long fiber tracts in the cord with subsequent paralysis, the patient, if unaware of the serious nature of his condition, may feel grateful for the relief of suffering but becomes discouraged and embittered because of increasing helplessness. Unless the patient knows he has a malignant condition, no matter how carefully it is explained to him that the operation to relieve pain will in no way affect his disease, the relief of pain in itself, however complete, may be far from satisfactory to the patient.

A word of caution might be said also about operating on patients who are addicted to morphine, especially when chordotomy is considered. Morphine sulphate gives only partial relief of nerve pain resulting from malignancy but the measure of relief it affords and its quieting effect on the nervous system easily and rapidly lead to fixed addiction to the drug. We have found such cases unsatisfactory for major operations for relief of pain from malignant disease as it is difficult if not impossible to determine afterward how much of the patient's complaint is due to actual pain and how much is the residuum of morphine addiction and craving for the drug. It often appears that the patient's discriminatory powers are seriously jeopardized by the morphine and he may complain bitterly of pain post-operatively in areas entirely numb to pin-prick stimulation. On careful analysis, it is often evident that his discomfort is due to the withholding of his morphine post-operatively rather than to the nerve pain which he experienced before operation. It is undoubtedly true that certain patients experience pain

in the legs and pelvis after successful upper thoracic chordotomy due to transmission of pain impulses along the sympathetic nerve fibers accompanying the great pelvic vessels. Such impulses apparently may still be transmitted and registered in the thalamus or other higher cerebral centers in spite of a successful bi-lateral chordotomy producing a clear-cut sensory level up to the lower rib margin or nipple line. However, so far as prolonged use of morphine before chordotomy is concerned, we now believe that neuro-surgical operations (especially chordotomy) performed for the relief of pain in incurable malignancy are contraindicated in patients who have become dependent on opium. This view is also shared by Adson of the Mayo Clinic and other neuro-surgeons throughout the United States.

The preceding remarks are not to be interpreted as a condemnation of chordotomy, so brilliantly conceived in 1912 by Spiller of Philadelphia, who contributed so much to American neurology, and first carried out by Edward Martin of the University of Pennsylvania, and later perfected by Frazier. We wish only to emphasize its limitations and to urge careful selection of patients, with especial reference to life expectancy and consideration of morphine addiction, before operation is undertaken with any real hope of relieving the patient of his suffering with satisfaction to all concerned. Dr. Crutchfield's series of chordotomies at the University of Virginia Hospital, as reported by the essayists, certainly deserves the highest commendation.

Mesencephalic section of the spinothalamic tract, as carried out by Walker of Chicago, is utilized for the relief of pain in the arm and upper chest. Rhizotomies are still done in selected cases for local chest and arm pain espe-

cially, and subarachnoid alcoholic injection may be used in debilitated bed-ridden patients.

Facial and neck pain of malignant origin is another and more difficult problem so far as its surgical relief is concerned. If the tumor does not involve the lateral aspects of the face and scalp, the usual operation, as for the relief of tic douloureux, may be done, as originally devised by Spiller and carried out by Frazier (fifth nerve post. root section) in 1901, provided the pain is confined to the fifth nerve distribution alone. If it involves the throat, the side of the neck, the ear and other adjacent areas, more radical nerve sections must be done, possibly the fifth, ninth, one or two filaments of the tenth, and the upper posterior cervical roots on the same side. In relatively young and otherwise vigorous individuals, such procedures are often very worth while, relieving the patient of intense suffering for months or years before death ensues due to the inevitable extension of the malignant disease.

DR. COOPER, closing the discussion: I should like to point out that the fact that pain is not always completely relieved after neurosurgical procedures is emphatically not a reason to postpone or omit them. The reduction of an excruciating pain to a moderate pain, or a moderate pain to a light one is well worth while, as anyone who has had the unhappy experience of handling a case of painful cancer will testify.

I do not think there is anything more, really, that remains to be said except to thank Dr. Meredith for his very fine discussion and to re-emphasize that in the handling of recurrent and late malignancy the physician should exhaust all other resources before abandoning his patient to narcosis.

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### Floral Eponym (25)

IRIS KAEMPFERI, SIEB. RHODODENDRON KAEMPFERI, PLANCH.  
KAEMPFER, ENGELBRECHT, 1651-1716.

These two widely different but beautiful flowers, the Japanese Iris and the Japanese azalea, were named for the first plant explorer to Japan. Kaempfer was born in Westphalia, studied medicine at Königsberg, and traveled extensively in the East. He was chief surgeon to the Dutch East India Company. At his death his unpublished mss. were purchased by Sir Hans Sloane. Among them was a history of Japan which was translated by J. G. Schenchzer and published in London in 1727. For more than one hundred years it remained the chief source of information on Japan for the general reader.



## THE RELATIONSHIP OF SOIL FERTILITY AND PSYCHIC REACTIONS

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Man's optimal growth, development, and functions require optimal nutrition. The source of nutrition for zoological life is the product of the soil and the sea. The quality of the soil's product is dependent on its fertility. Thus, soil, as a source of man's food, becomes a concern of the physician. I quote the United States Department of Agriculture's 1938 Year Book for a description of fertility of the soil: "The quality that enables a soil to provide the proper compounds, in the proper amounts and in the proper balance for the growth of specified plants, when other factors, such as light, temperature, and the physical condition of the soil, are favorable." Soil fertility, as described by Howard,<sup>1</sup> "is the condition which results from the operation of nature's round, from the orderly revolution of the wheel of life; from the adoption and faithful execution of the first principle of agriculture—there must always be a perfect balance between the processes of growth and processes of decay. The consequences of this condition are a living soil, abundant crops of good quality, and livestock which possess the bloom of health."

As doctors we are interested in the biological assay of nutrition. A soil is fertile when the plant or animal there produced sustains man in a state of optimal health.

*The Interrelation of Soils and Plant, Animal and Human Nutrition* was the title of an address by Auchter,<sup>2</sup> in which he said: "Our knowledge of many aspects of the interrelations between soils, plants, animals and human beings is limited, but some of the work that has been done in recent years gives us fascinating glimpses of the possibility and importance of further discovery. I would go so far as to say that we can now see the outlines of a whole new field of biological, or, shall I say, agricultural, research. From what is already known, this phase of agricultural research should lead to a new orientation of agricultural thinking. Certainly it suggests profound implications for human welfare."

While we are engaged in the most colossal destruction of man and his resources that history

records—World War No. II—the question in every pondering mind is "why"? It is the why's of human conduct, both normal and abnormal, both of the individual and of the mass, both in the present and in the past, that have stimulated the scientific investigations of psychiatrists and others. The psychobiology of the group is only the multiplication of the individual's psychobiology—reduced somewhat in its capacity. The psychopathology is tempered in its extremes by the reaction of millions, or increased in its intensity by small mobs. The etiological factors functioning in the individual are a controlling factor in group behavior.

Psychiatrists have recorded their meditations on mass psychiatric behavior—Hall<sup>3</sup> in his discussion of the manic depressive syndrome of the mass, White,<sup>4</sup> during World War No. I, wrote of psychiatric factors in causes of war, and regarded war as a mass regressive reaction. Stevenson<sup>5</sup> in 1941 suggested "that war be regarded as a mass psychosis caused in large part by emotional disorders and adjustment difficulties somewhat similar to those causing individual psychosis, and as such offered a most important field for psychiatric effort."

A recent psychiatric study of the German problem has been made by Brickner<sup>6</sup> in his book—*IS GERMANY INCURABLE?* In order to cure we should understand. Brickner's approach to the problem of Germany's millions was that of a modern psychiatrist skillfully getting the complete picture of his patient. The history revealed the onset of illness years before Hitler. The illness manifested its symptoms of lust for power, abnormal reverence of the military, and ideas of persecution. The neuropathology was that of paranoia. Brickner, with his appreciation of the malignancy of paranoia, suggests that an attempt to cure German culture be made by giving the Teutonic mind a more healthy emotional development. "How it should be done is a job for experts in a dozen different fields—anthropology, law, sociology, nutrition, transport, propaganda, psychology, economics, as well as psychiatry—the psychiatrist is expert in only one of those."

This war has presented the physician, and espe-

cially the psychiatrist, with facts about the health of our male population of draft age. The prevalence of neuropsychiatric disorders demands that we think in terms of therapy for the disorders and prevention for the next generation. In the mobilization of our armed forces, neuropsychiatric disorders have been the cause for the rejection of 8 to 10 per cent of the men examined for military service. In spite of this screening at the Induction Stations, 30 per cent of those discharged from the army are discharged for psychiatric reasons.<sup>7</sup>

What are the causes of nervous disorders? Of course, it is not always necessary to know the cause in order to treat, but it is a help. However, the prevention of these disorders is dependent on our understanding of the etiology. There are known factors that make the individual a likely candidate for a neurosis. First of these is his heredity. This we can do little about except to teach him to practice good hygiene. In order that we may impart this knowledge to our patients and to potential patients, we psychiatrists must have a clear concept of what constitutes good hygiene.

We are prone to limit our concept of hygiene to mental hygiene—here I think we confuse the problem. Is there any way to separate mental hygiene from hygiene? Perfection of mental function and maximum capacity cannot be separated from perfection of body function. Thus, I regard our problem of mental hygiene as a part, and an inseparable part, of total human organism hygiene. It is hygienic living that may prevent the precipitation of illness in the less strong and less stable individual. It is good hygienic living, with special attention to defectiveness or other limitations, that may allow certain individuals to function in a manner satisfactory to themselves and to others.

Today psychiatric medicine has a great challenge. A large number of rejected selectees and discharged members of the armed forces have been told they have psychiatric disorders. These men—some of them, who were not conscious of their minor psychobiological disorders—are today looking for medical help. They are coming to psychiatrists for what they previously thought was a stomach, heart, or body ailment. There are not enough psychiatrists to handle all of those who have problems and who are now presenting themselves for help in our American communities. It is imperative that psychiatrists give to them—and to others from whom they may

seek help—some understanding of their psychiatric problem and the things that can be **done to aid in** their rehabilitation.

This situation makes it imperative that we marshal all of our ability and review our knowledge of health and illness. Man starts life with potentialities given him by his inheritance. The full development of these capacities depends on his environment. His capacities to withstand trauma—to avoid susceptibility to infection—to survive infection—to evolve through situations—are dependent on his perfection of development. This perfection of development of man is primarily sustained by his food. The quality and quantity of nutriment either helps or hinders his development. The maintenance of man's capacity to function is dependent on several factors, but the one that is absolutely indispensable is nourishment. The health of man, and, consequently, his efficiency, is dependent on his state of nutrition. His psychobiology and some of his psychopathology are nutritionally determined.

This optimal health and its absence may have more importance than we have heretofore realized or emphasized in individual and mass personality reactions. The possession of this optimal health may be one of the factors in the rise of a nation to a world power. The loss of this optimal health and adjustability may be a factor in the decline of a people. An environment's biological assay is optimal when it produces the maximum growth, development, and function within the hereditary bounds of man, and when it gives him vigor and freedom from susceptibility to acute and degenerative diseases. Does it follow that mass maladjustment or mass psychosis of a nation may be the etiology of war as suggested by White and Stevenson? It is our observation that a person can get along better with himself and with others when well. Group, mass, or national adjustment is a multiplication of individual adjustment with or without complication.

We in psychiatry are daily pondering the multiple reasons for normal and abnormal psychic reactions. The membership of The Association for Research in Nervous and Mental Diseases, appreciating the importance of food, chose *The Role of Nutritional Deficiency in Nervous and Mental Diseases* as the subject for its 1941 symposium. The medical journals have many papers telling of recently acquired knowledge on almost every variety of deficiency—avitaminosis, hypoprotein anemia,



and mineral imbalance, with therapeutic response when therapy is based on the proper rationale. The London letter in the *Journal of the American Medical Association*, January 29, 1944, told of postwar food planning. "Food experts who have advised the government during the war are now planning for the postwar era. They hold that such a commission will revolutionize agriculture and lay the foundation for prosperity in other basic industries. White bread, margarine, jam, and tea, regarded by large masses of people as a staple diet, will be discouraged. Instead, the people will be given an opportunity to increase their consumption of milk, eggs, fruit, vegetables, and meat. World food policy, with which Great Britain will be closely linked, will be directed to the same end."

It is the physician's responsibility to inform and to lead in a world food policy. We will either lead or be led. Our thought has to the present been chiefly concerned with the inadequate diet and its pathology. We are aware that inadequate nutrition leads to deficiency diseases and, one might add, an unhappy and weakened civilization. In order that we may be aware of what is being discussed by informed laymen, I refer to the procedures of the British Parliament.

*Soil and Health* was debated in the House of Lords, October 26, 1943, and again on February 2, 1944. The observations of doctors, agriculturists, and other scientists were quoted by informed statesmen. I quote from the speech of The Earl of Portsmouth in the second debate: "I should like today to confine my arguments as far as possible to the findings of a group of people who are scientifically qualified in the highest degree and who have had a long experience of the matter we are discussing. I refer to the group known as the Peckham Pioneer Health Service. They are, as your Lordships are probably well aware, a group of doctors who have investigated over a period of years an urban cross-section of our population. They have confined themselves to no particular class. So that their experiment and their experience may be not made invalid by special arguments, their experiment has been confined neither to very poor income ratios nor to the very high income ratios, but covers a very wide cross-section of the population and a very wide cross-section of occupation as well. The point they were searching for was to produce health, to have research into health and its relationships.

"They have begun with the family as a unit. Arising from their work with the family, naturally the whole question of environment has come in and the most vital member of the family—the mother—has been the subject of their special attention. The noble Lord, Lord Woolton, the day before yesterday, made a most profound and interesting speech to a body called the Food Education Society, and he expressed a wish in that speech that hospitals might become the centres of positive health. With all due deference I feel that the term 'positive health' is there used in its wrong context, because positive health cannot begin with hospitals. Hospitals may be magnificent centres for rehabilitation, for teaching a better way of life to those who have been invalids, but they cannot be centres of positive health. Positive health, in my opinion, and I believe in that of most of those who have thought deeply upon this question, must begin in the womb and indeed in the womb before conception starts, with the health and vitality of the mother. In that connection the doctors working in the Peckham Health Centre discovered that feeding the families in the Centre with the ordinary so-called balanced food diet bought from a shop was not enough. The vitamins and so forth in the ordinary analysis of such vegetables as spinach and in such food as milk were not there; the vitality was not there; and they were forced to turn then to their own farm. They were forced to grow the food themselves, so as to get the beginnings of positive health in the unborn child, and the methods upon which Lord Teviot and others spoke in the debate on 26th October last. They were forced to use not new methods but the ancient method of returning waste to the soil and creating humus."

In America the Year Book of Agriculture for 1938 is published under the title of SOILS AND MEN. Many other publications show that much is being done in America on the subject of nutrition—*Interrelations of Soils and Plant and Animal Nutrition*, SCIENCE, May 12, 1939; *Nutrition and Soil Conservation*, JOURNAL AMERICAN DIETETIC ASSOCIATION, June-July, 1938; *Effect of Soil Treatment on Vitamin Content*, BIOCHEMICAL JOURNAL, September, 1939; *Soils and Nutrition*, ANNALS ACADEMY OF POLITICAL AND SOCIAL SCIENCE, January, 1943; *Riboflavin in Soil*, SCIENCE, July 30, 1943, etc. These point to the relation between the vitality of man and the vitality of the soil from which he feeds.

Now, let us turn to certain observations offering



themselves as indices of the relationship between inadequate diet and neuropathology, which cause both minor personality disturbances and mental symptoms. McLester<sup>8</sup> noted that many of the pellagrins were considered neurasthenic before the objective signs of pellagra became manifest. It is generally accepted that some cases of pellagra depend exclusively on a deficiency of nicotinic acid and that there is often an additional deficiency of thiamine. He suggested that many of the psychiatric symptoms of pellagra depend primarily on insufficient thiamine in the diet.

Tucker<sup>9</sup> says: "The story of pellagra is a long one and one which, in spite of the widely accepted vitamin deficiency theory as to its etiology and treatment, is still unfinished."

Spies-Aring-Gelperin-Bean<sup>10</sup> point out that pellagrins show a multiplicity of complaints—fatigue, insomnia, anorexia, vertigo, burning sensations, numbness, palpitation, nervousness, anxiety, headache, forgetfulness, apprehension, and distractibility. These neurotic symptoms showed a prompt response to nicotinic acid therapy.

Jolliffe<sup>11</sup> and his co-workers were able to produce with a thiamine-poor diet a neurasthenic syndrome in four out of five experimental subjects.

Bowman and Wortis<sup>12</sup> state: "The brain is dependent for its normal functioning on a carbohydrate substrate, an adequate supply of oxygen, and various enzyme and coenzyme systems. A disturbance in any of these constituents interferes with brain metabolism and, therefore, with brain function. . . . Our present knowledge indicates that at least three of the vitamins already isolated are concerned with the proper metabolism of carbohydrates—the preferred foodstuff of normally functioning brain tissue. These are thiamine hydrochloride, nicotinamide, and riboflavin. They regard some neurasthenic syndromes, cortical dysfunction associated with acute peripheral neuropathy, Wernicke's syndrome, pellagra, and delirium tremens as clinical pictures that may result from thiamine and nicotinic acid deficiency.

Wilder,<sup>13</sup> in a discussion of symptoms and signs of thiamine deficiency, concludes: "Moderate prolonged restriction of thiamine but not of food calories is associated with states of emotional instability and changes of attitude and mood reflected by irritability, depression, quarrelsomeness, poor cooperation, vague fears progressing to agitation, restriction of activity, and multiple somatic complaints."

Elvehjem<sup>14</sup> reviews the *Relationship of Enzymes to Deficiency*, and states: "It is possible to conclude from this short review that certain vitamins may be constituent parts of certain enzymes and that these enzymes show a significant decrease during deficiency diseases."

Minot<sup>15</sup> opens his discussion of *The Problem of Nutritional Deficiencies* with this statement: "The present emergency is the most serious emergency in our history. A fundamental condition of a will to victory is a will to be healthy. This implies that food be taken to maintain optimal nutrition. With faulty food, there is faulty nutrition, faulty function, faulty structure, disease."

He concludes with the following statement: "The effects of food on vitality are fundamental and far-reaching. The benefit of better feeding usually becomes more evident after it has been continued throughout a large part of a life cycle and its effects may not be seen until a second generation. The great opportunity for utilization of modern knowledge of nutrition is in the prevention of unstable nutritional states. The prevention is much simpler and vastly more economical than treatment after bodily defects have occurred. The problem of nutritional deficiencies is the prevention of partial deficiency; adequate nutrition is one of the first lines of defense of this nation."

The recognition of certain frank nutritional deficiencies and their cure represents progress in nutritional medicine. It is the minor, or subclinical, states that present an unsolved problem to the physician and the patient. The doctor is not in a position to recognize the latent syndromes and the patient does not appreciate his malnourished state. Therefore, the best therapy is the prevention of both the frank and the partial nutritional deficiencies with their interference of man's function—his psychic reactions. It is the prevention of abnormal psychic reactions that interests us in psychiatry.

We have in the above discussion referred to rather specific disturbances in normal psychic reactions when the individual is malnourished. Malnourishment is not limited to humans. Recent observations have shown pathological reactions in animals when they, too, have been malnourished. For instance, the paralysis, or so-called Bush sickness, of sheep in New Zealand was attributed to the lack of cobalt in the soils and thus in the plants, and the addition of cobalt to the soil is now preventing the paralysis.

Nutrient disorders in plants occur and have been corrected by the addition of a specific nutrient to the soil—magnesium in sand grown of tobacco; manganese in chlorosis of tomatoes; boron in diseases of the cauliflower and sugar beet; zinc in pecan rosette; sulphur for the yellow of tea. These findings rather indicate that plants are dependent on the soil for a multiplicity of minerals and without them, or without the capacity to use them, they become sick. In addition, it is also pointed out that animals are affected by a deficiency of minerals in the soil. Is the nutrient value of plants to man dependent on the fertility of the soil? Does it follow that the nutrient value of animal products is also dependent on the fertility of the soil which grows food that the animals consume?

Soil fertility that is optimal for the production of quality foods depends not only on the minerals, its physical structure, tillage, moisture, sunlight, but also on the fauna and flora of the soil. The bacteria play an important part in making air nitrogen available to the plants and in the decomposition of humus. The fungi surround the rootlets and even penetrate them, forming what is known as the mycorrhizal association and what is described by Howard as being the living fungous bridge which connects soil and sap.

McComb<sup>16</sup> and others in comparing mycorrhizal and non-mycorrhizal plants showed that the mycorrhizal seedlings contain four times as much phosphorus as the non-mycorrhizal plants.

There is further evidence that the type of soil fertility affects foods. Kellogg<sup>17</sup> in an article, *Soils and Nutrition*, makes this statement: "Soil conditions and soil management practices, including the use of fertilizers, influence . . . the mineral content of foods."

Recently K. C. Beeson<sup>18</sup> collected the available data on the mineral content of foods, especially as related to soil type and soil management practices. His tables show, for example, that lettuce may contain nearly 0.05 per cent or less than 0.001 per cent of iron. Vegetables of normal appearance may vary 100 per cent in their content of calcium. There are even greater differences in phosphorus, while copper, iron, and manganese may show variations of several hundred per cent. By selecting obviously abnormal specimens, far greater variations are found. Some of the differences are due to variety, some to environmental conditions, especially soil, and some

to other causes.

The vitamin content of plants may also be influenced by the fertility of the soil, particularly the humus content of the soil, as pointed out by Carpenter<sup>19</sup> who states: "While studying the occurrence of vitamins in fungi, the question was raised as to whether there was a possibility of finding vitamins in soil. . . ."

"The work was confined to riboflavin and this vitamin was found in many 'local soils'.

"From work done at present, we believe that occurrence of B2 is correlated with the amount of organic matter in the soil . . . and that some plants take up vitamins from this source as they absorb essential mineral elements."

These findings point to the fact that riboflavin and minerals in the plants may depend on the humus and mineral content of the soil. Such observations suggest that the quality of the plant is dependent on the fertility of the soil; thus optimal soil fertility predetermines that the plant will have the potential source from which it can possess optimal food value.

The writer pointed out in a recent paper—*The Effect of Agricultural Practices on Health and Disease*—that the diet of the Northern Chinese, although inadequate in vitamins A, C, and D, calcium, and in total calories, biologically assayed higher than our American diet if the presence and absence of degenerative diseases were considered. This suggested an x factor in the produce that was grown by the Oriental agricultural practices, where natural manures are used, and that there is some lack of nutrition in the produce grown by our Occidental agricultural practices, where artificial fertilizers are used.

Howard<sup>1</sup> states: "The principle followed, based on the Liebig tradition, is that any deficiencies in the soil solution can be made up by the addition of suitable chemicals. This is based on a complete misconception of plant nutrition. It is superficial and fundamentally unsound. It takes no account of the life of the soil, including the mycorrhizal association—the living fungous bridge which connects soil and sap. Artificial manures lead inevitably to artificial nutrition, artificial food, artificial animals, and, finally, to artificial men and women."

We have referred to psychopathology resulting from inadequate diet. We have recorded observations that show foods may also have had an inade-



quate diet and, therefore, are inadequate in their potentialities to nourish man as they themselves are malnourished.

In order to prevent deficiency diseases, and especially the subclinical ones, our program will have to be educational. First, the agriculturist must produce the food that is more consistently high in quality. Second, people should be informed what positive health is, and that it must be treasured and guarded with good hygiene. This requires good habits—eating and others. The modern science of nutritional medicine will have to evolve to the stage of prevention. This requires that we know not only the nutrient needs of the human body but the source from which and the means by which it may be obtained. The prevention of deficiency diseases is going to be an educational program—first, of the consumer; second, of the farmer. When the buyer demands and is willing to pay for a quality product, the production of such a product becomes economically sound. It will be then and then only that we shall be able to buy quality foods that have the capacity to give optimal nutriment to our bodies.

There seems to be a correlation between deficiency diseases and some pathological psychic reactions. Malnutrition is etiological of deficiency diseases; deficiency in nutrition is due in part to soil deficiency—poor fertility; deficiency in soil fertility is the source of food poor in quality and, therefore, inadequate to maintain optimal health. Thus, soil fertility becomes a factor in the psychobiology of man.

We in medicine are interested in optimal health, and in psychiatry we are vitally concerned with malnutrition as it affects psychobiology. It is for this reason that we find ourselves today interested in the source of malnutrition—soil, an impoverished soil, as a cause of an impoverished people with psychopathological complaints.

In order to treat, we will have to understand health and disease of the soil. A fertile soil is alive with its bacteria, fungus, and protozoa. The maintenance of this microscopic life seems to be as vital for the plant as the intestinal flora is for man's nutrition. The nutrition of this microscopic life in the soil demands that we concern ourselves about its environment—the food supply, the oxygen supply, and the physical condition of the soil. The optimal health of the bacteria, the fungus, the protozoa, and the earth worms takes on vital impor-

tance in the maintenance of a food supply to human beings that is adequate in quality as well as in quantity. Today when the soil is being called on to furnish nutrition to large urban populations and to produce so much raw material, especially at this time for synthetic rubber and fuel, the maintenance of soil fertility becomes a greater problem.

The ancient agricultural practices of supplying the soil with nutrition for its life by returning all things and the refuse of all things to the soil is no longer practiced, or, perhaps, possible. The multiple demands of protoplasmic growth seem to be best satisfied by natural manures. However, if chemical substitutes must be used, let us supply more completely the protoplasmic need. At the same time the effect on the microscopic life in the soil which is vital to man's vitality must not be destroyed.

Man's interference with the perfect balance between the natural processes of growth and decay may be largely responsible for the predicament of our malnutrition. Howard<sup>1</sup> states that "the agriculture of ancient Rome failed because it was unable to maintain the soil in a fertile condition. The farmers of the West are repeating the mistakes made by Imperial Rome. The soils of the Roman Empire, however, were called upon only to assuage the hunger of a relatively small population. The demands of the machine were then almost non-existent. In the West there are relatively more stomachs to fill while the growing hunger of the machine is an additional burden on the soil. The Roman Empire lasted for eleven centuries. How long will the supremacy of the West endure? The answer depends on the wisdom and courage of the population in dealing with the things that matter. Can mankind regulate its affairs so that its chief possession—the fertility of the soil—is preserved? On the answer to this question the future of civilization may depend."

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### A New Magnet for Foreign Bodies in the Food and Air Passages.

A new type of magnet, by which magnetizable foreign bodies in the stomach and windpipe can be removed, thus eliminating operations which often are necessary to remove such objects, is described in *The Journal of the American Medical Association* for January 13 by Murdock Equen, M.D., of the Ponce de Leon Eye and Ear Infirmary, Atlanta, Ga.

The magnet is composed of alnico, an alloy of aluminum, nickel, cobalt and iron. For the past two years, Dr. Equen says, the new alloy magnet has been available as a small permanent type for use in removing foreign objects from the eye.

The instrument reported for use of the magnet is composed of a tube to which the magnet is attached and which is introduced into the stomach through the mouth and esophagus. At the other end of the tube is a rubber bulb which is used for inflating the stomach. This inflation lifts any collapsed portion of the stomach from the foreign object, such as a pin, allowing the magnet to be passed about freely, and the foreign body is thus unimpeded in being attracted by the magnet.

As Dr. Equen explains, the removal of foreign bodies from the stomach and windpipe by means of the gastroscope and flexible forceps is a very difficult procedure. The constant shifting of the position of the foreign body, in a space as large as a stomach, makes it very difficult to establish contact between the forceps and the object.

Alnico magnets require a considerably stronger magnetizing force to magnetize them completely than do other types of permanent magnet alloys, the author says. At the same time, alnico has more available external energy or attracting power for a given volume or size than has any other permanent magnet material known at the present time.

Dr. Equen presents in his paper a case report that he says is typical of the entire series of cases of foreign bodies removed by the new magnet. He tells of a girl aged 19 months who had swallowed her mother's hairpin twelve hours previous to the time the baby was brought to him. The new instrument was passed down the esophagus and introduced into the stomach of the child. This was done against a background of a fluoroscopic screen which revealed by means of x-ray the position of the hairpin and also of the magnet. The stomach was then inflated, the pin quickly coming into the range of the magnet to which it was attracted and then withdrawn from the stomach. The entire procedure lasted only eight minutes, he said.

"The new alloy magnet, alnico," Dr. Equen concludes, "is being proved of great value to medicine. For the past two years it has been available as a small permanent type eye magnet. Only a minority of foreign bodies of the food and air passages are magnetizable, but among those which are the use of this instrument will render unnecessary many abdominal operations and decrease bronchial instrumentation."

## CLEIDOCRANIAL DYSOSTOSIS—REPORT OF CASE\*

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Roanoke, Virginia.

This disease which affects the ossification of the clavicles and the membrane bones of the skull, and presents certain aberrations of the dental system, was first reported by Meckel<sup>1</sup> in 1760. Marie and Sainton,<sup>2</sup> in 1897, were the first to describe the syndrome as hereditary cleidocranial dysostosis and recorded four cardinal characteristics by which the disease may be recognized: (1) aplasia, more or less marked, of one or both clavicles; (2) exaggerated development of the transverse diameter of the cranium; (3) delay in ossification of the fontanels, and (4) hereditary transmission. One or more of these characteristic features may vary, but the clavicular deformity appears to be the most essential feature to the diagnosis. The cause of the disease is unknown. It is thought to be hereditary, however, not necessarily so, as cases are reported to appear spontaneously and are described as of mutational origin capable of being transmitted, thus becoming a dominant Mendelian characteristic.

The clavicular defects may permit unusual mobility of the shoulders, frequently to the extent that both shoulders may be brought forward and medially until they both touch each other.

Cleidocranial dysostosis may be overlooked in a general physical examination. In 1943, Rankow<sup>3</sup> (Captain (D.C.), U. S. Army) reported two cases in the army both of which were encountered within a six month interval; the first, at the Aberdeen Proving Ground, Maryland; the second, at Camp Sibert, Alabama. It has been stated that most patients affected with this disease do not as a general rule consult the medical profession concerning themselves, as they are usually well and consider themselves normal, being free from any discomfort. On the other hand, the dentist will be conferred with rather frequently because of the magnitude of the dental problems involved. The unique dental findings often lead to a diagnosis.

Several men recently have contributed much to the dental conditions and findings in this very rare disease (at present around 250 cases have been reported). Thoma<sup>4</sup> concludes that the following den-

tal conditions are associated with cleidocranial dysostosis: (1) micrognathia of maxilla; (2) persistence of deciduous teeth in both jaws; (3) unerupted permanent teeth in maxilla and mandible; (4) unerupted supernumerary teeth; (5) displacement of the teeth; (6) morphologic changes, such as cone shape. A recent report of four cases by Millhon and Austin,<sup>5</sup> of the Dental Department of the Mayo Clinic, substantiates the consistency in the dental findings of Thoma. Winter<sup>6</sup> has presented an excellent review of cleidocranial dysostosis up to 1944. These investigators find that the oral manifestations are fairly constant and present definite characteristics in this disease. The maxilla is under-developed, presenting a high V-shaped palate which may be furrowed through the median line or in some cases a small cleft. The mandible appears to be prognathous. There is a failure of the deciduous teeth to be exfoliated normally. The permanent teeth lose their eruptive stimulus and remain embedded in the maxilla and mandible, completing their development unerupted. There is a high incident of supernumerary permanent teeth along with some geminated teeth. The unerupted teeth are usually lying in an irregular arrangement. Some may even be inverted. The development of dentigerous cysts from tooth follicles of some of the unerupted teeth have been reported.

Cleidocranial dysostosis must be differentiated from other diseases, as some of the dental findings may be found in cases of rickets, pseudo-anodontia, congenital syphilis, craniofacial dysostosis, achondroplasia, cretinism, and in some other cases of dysfunction of the endocrine system. However, the clavicular defect appears to prove the specificity of the syndrome. Yet, Rhinehart<sup>7</sup> reported a case of multiple dysostosis which he considered came under the classification of cleidocranial dysostosis, but differed from the standard description and the interpretation of the name because of the absence of defects of the clavicles.

## CASE REPORT

On November 17, 1943, Mrs. J. L., a married white woman, age 29 years, came to me, having

\*Read before the monthly meeting of the Roanoke Academy of Medicine, Roanoke, March 6, 1944.

been referred by her dentist for the removal of her teeth, together with the removal of several unerupted and impacted teeth.

The patient had been wearing an upper partial denture for 15 years and a lower partial denture

with a high furrowed V-shaped palate. Prognathism of the lower jaw was evident.

*Roentgenographic Examination.* The dental roentgenographic examination (Fig. 1) revealed about twenty-six unerupted and impacted teeth. A great

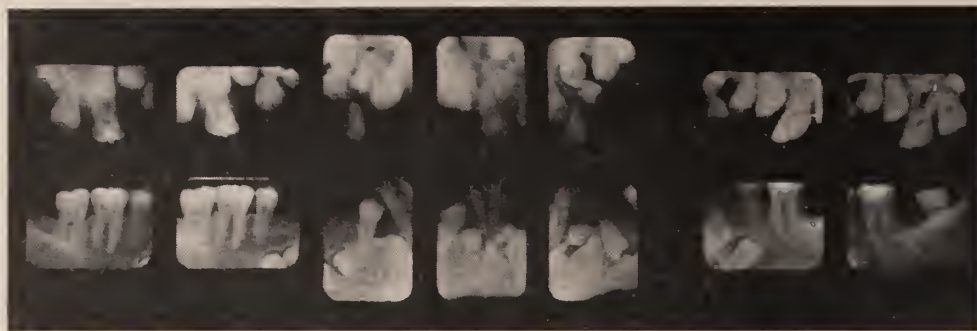


Fig. 1.—Dental roentgenograms showing numerous unerupted and impacted teeth and their irregular arrangement.

for 10 years due to the fact that she had so few teeth that had ever erupted after having had most of her baby teeth extracted. An erupting cusp of the lower left cuspid region was visible. This erupting cusp was giving trouble which forced her to seek dental treatment at this time, together with the hypersensitiveness of the erupted teeth that showed areas of exposed dentin about their necks and some caries.

*History.* There was an uneventful history of the usual childhood diseases. The patient was a housewife, finished high-school at the age of 18 and married at the age of 20. She has one son living who is apparently normal, 3 years of age. She stated that about eight months ago she had a miscarriage and her attending physician told her it was due to the hypersensitiveness of her teeth which she stated was almost unbearable during that period, along with severe pains in her jaws.

Her father died from cancer about four years ago and her mother, age 61, is still living. Her mother is affected similarly with this syndrome. The patient has a younger sister who is living and of normal health and size.

*Examination.* The physical examination was essentially negative, except, I might say, the patient was small of stature and gracefully built, which is usually seen in these cases. The height was 59 inches, weight 92 pounds. The skull showed a moderate bulging of the forehead with prominent bosses. The maxilla was small and under-developed

many of these teeth were lying in an irregular arrangement. In the upper and lower anterior regions the unerupted teeth appeared to be in clusters, with some being inverted.



Fig. 2.—Roentgenogram of chest showing clavicular defects.



The skeletal defects were demonstrated by Dr. W. E. Overcash.† His findings were: "A flat film of the chest (Fig. 2) shows the heart to be normal in size and contour, the diaphragms to be smooth and the lung fields to be clear. There is no abnormality of the ribs, but the left clavicle is entirely missing except for a small stump measuring  $2\frac{1}{2}$  cm. in length at the sternal end. On the right the two ends of the clavicle never fused in their development, being separated in the middle third and somewhat overlapping. There is spina bifida occulta of the first and second dorsal vertebrae.

"Antero-posterior and lateral films of the skull (Figs. 3 and 4) show a brachycephalic skull with prominence of the frontal bosses. The lower jaw is rather prominent giving some prognathism. The frontal sinuses are very small and the mastoids show very little pneumatization. The sella turcica is not enlarged. There is some thickening of the vault

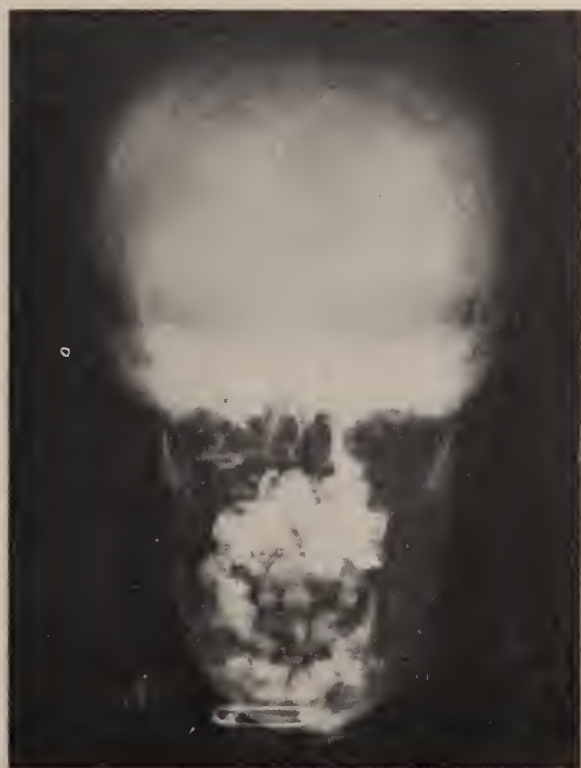


Fig. 3.—Antero-posterior roentgenogram of skull.

both anteriorly and posteriorly. There are numerous small Wormian bones along the suture lines. There is a metopic suture present in the frontal bone.

†Radiologist, Roanoke, Virginia.

Numerous unerupted teeth are seen in the maxilla and the mandible. These films show the rather typical changes of cleidocranial dysostosis. Other



Fig. 4.—Lateral roentgenographic view of skull showing abnormalities.

films of the skeleton should be taken to rule out other congenital anomalies."

#### COMMENTS

This is undoubtedly a case of hereditary cleidocranial dysostosis. As has been pointed out these cases present dental problems of great magnitude. It is unknown just why the deciduous teeth fail to be shed normally and persist, or why the permanent teeth lose their eruptive stimulus and fail to erupt and remain embedded in the jaws throughout life, or why there is an over-activity of the dental organs in forming so many supernumerary teeth.

It has been proved that the extraction of the deciduous teeth at any time will not aid in the eruption of the permanent teeth and is contraindicated; instead, the deciduous teeth should be given the utmost care. If the deciduous teeth are lost they should be replaced by prosthetic appliances even though the edentulous areas contain many unerupted teeth. Those patients who have had their deciduous teeth removed or have shed them and wearing artificial dentures frequently need to have a tooth removed, as a cusp of an embedded tooth will occasionally make its appearance through the mucous membrane. The removal of all the embedded and

impacted teeth before the insertion of full dentures is, likewise, contraindicated, because there would be so great a destruction of the alveolar bone and ridge that it would make the fitting and wearing of dentures very unsatisfactory. It appears that it is good practice to remove only those teeth which are very near the surface and later those that make their appearance from time to time throughout life. Dental radiographic examination should be made at regular intervals. Orthodontic treatment appears to be of no avail; however, the orthodontist should assist as much as possible in an effort to correct the dental irregularities and jaw relations. Bilateral osteotomy may have to be performed to correct the prognathous condition of the lower jaw.

Surgical intervention may have to be instituted in case of disturbances that may arise from some of the skeletal anomalies.

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### Education for the Public on Whooping Cough.

With the peak of the 1,000,000 cases of whooping cough coming at this season, the current Upjohn educational message on pertussis, appearing in full color pages in the *Saturday Evening Post*, *Life*, *Time*, and other national magazines, will be seen by an estimated ten million readers. Many of these are unaware of the seriousness of pertussis and of the fact that by modern means the majority of cases can be prevented.

The message is illustrated by a painting of an appealing little girl by the distinguished artist Simka Simkhovitch, and asks the reader: "What if you could make almost sure she'd never get whooping cough?" It urges mothers to take their children to their doctor for immunization or to call him promptly in case the child has already contracted whooping cough.

This message is one of a series on health education, sponsored by The Upjohn Company of Kalamazoo, Michigan. Other messages have discussed pneumonia, rheumatic fever, and blood plasma, al-

ways from the point of view of the doctor speaking humanly to his patients. Future subjects will be pregnancy, the menopause, and stomach ulcers.

### The "Continental" Breakfast Is Not Suitable for a Growing Child.

In far too many homes, a breakfast of a roll and a cup of coffee is the fare for children as well as adults. Woefully deficient in vitamins and minerals, such a meal furnishes little more than a small amount of calories. A dish of Pablum and milk, however, is just as easily prepared as a "continental breakfast," but furnishes a variety of minerals and the vitamin B complex, not found so abundantly in any other cereal or breadstuff. The addition of a glass of orange juice and one Mead's Capsule of Oleum Percomorphum can easily build up this simple breakfast into a nourishing meal for the children of the family as well as the adult members. It is within the physician's province to inquire into and advise upon such nutritional problems, especially since Mead Products are never advertised to the public.

## MINIMAL PULMONARY TUBERCULOSIS

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In the past few years the discovery of minimal pulmonary tuberculosis has markedly increased. As the result of active case finding programs, including mass surveys in industry and x-ray examination of inductees, many asymptomatic, early tuberculous lesions have been found. Colonel Freer,<sup>1</sup> in a recent survey of the experiences of several Army induction stations, found that approximately 1 per cent of those examined were rejected because of pulmonary tuberculosis. Therefore, about 150,000 men can be expected to be turned down by the Selective Service System because of tuberculosis. Of this number, about one-half will have active pulmonary tuberculosis and will need treatment. Hilleboe and Gould<sup>2</sup> reveal that "during the year and a half ending in December, 1943, the field units of the Public Health Service have surveyed 117 industrial and other population groups in eleven states, the District of Columbia, and Mexico City. A total of 559,306 individuals have been examined, of whom 5,648 showed x-ray evidence of significant re-infection tuberculosis. This constitutes 1 per cent of the persons examined. Of these 5,648 positive films, 62 per cent were minimal, 31 per cent moderately advanced, and 7 per cent far advanced in extent." As the result of these surveys, as well as the more extensive use of routine chest films in private practice, the problem of minimal pulmonary tuberculosis has become one of major importance. Eradication of tuberculosis rather than its control becomes the major objective of those interested in this disease; the proper handling of all early lesions is paramount for the success of this program. The organized anti-tuberculosis organizations in the State must assume the major responsibility in the handling of these cases, but, because of their large number, many of these early cases must be handled by private physicians.

The first problem in the handling of minimal pulmonary tuberculosis is to determine the stability of the lesion and this may be extremely difficult. If the lesion casts a stringy shadow on x-ray, suggesting fibrosis, it is probably healed or in an arrested

state. This type of lesion should be handled as any other arrested case, e.g., periodic x-ray examinations. If the shadow on the chest film appears "soft" and mottled, having the appearance of a small pneumonic infiltration, one must conclude that the lesion is active and the patient so treated. If a previous chest film taken within the past four or five years does not show the lesion, one should assume that the disease is active.

Unfortunately, the activity of a large number of lesions cannot be determined from x-ray alone. History of cough, malaise, easy fatigue, weight loss, etc., are important in determining activity, but few of the early lesions produce symptoms. Physical examination likewise is rarely of aid in establishing the stability of the lesion. It is in these cases of questionable activity that the most sensitive methods of demonstrating tubercle bacilli must be employed. Because these patients fail to raise sputum, it is necessary to obtain fasting gastric contents and culture the centrifuged material. This should be done on three consecutive mornings. However, it is to be remembered that in the majority of active minimal lesions one cannot demonstrate tubercle bacilli in gastric contents even on culture. The patient is followed with frequent fluoroscopic examinations and is again x-rayed at the end of six weeks. At this time the stability of the lesion is again evaluated in the light of any roentgenographic change that may have occurred, as well as the result of the culture of the gastric contents. If the lesion remains unchanged by x-ray and the culture is negative, the patient continues to be followed closely by frequent fluoroscopies and chest films for at least a year. Examinations are then continued at three to six month intervals for variable periods of time, depending upon the age of the patient: the younger the patient, the longer is the period of follow up. In young adults, unless close observation can be carried out, the lesion should be handled as an active one. In the negro race the lack of resistance is so striking that every minimal lesion of doubtful stability should receive treatment. It is not unusual in this race to see a minimal lesion progress to an advanced stage in only a few weeks.



Zachs<sup>3</sup> studied 536 cases of pulmonary tuberculosis in the second decade of life over a period averaging four years. During this time he found extension of the disease occurred in two-thirds of the minimal cases. The seriousness of minimal pulmonary tuberculosis has also been emphasized by Stein and Israel.<sup>4</sup> They state that sixty-six asymptomatic cases were observed in the clinic of the Henry Phipps Institute over a period varying from one to five years. During this period the disease progressed in thirty of the sixty-six cases, twelve of whom died (eleven of the latter were negroes).

The early infiltration may be absorbed almost completely, leaving only a few fibrous strands or it may spread, become caseous and liquefied in its center and ulcerate into a bronchus. The rate of these changes varies greatly. Rapid progression is not uncommon among young adults. The opportune time for securing maximum results from treatment is in this early phase, preferably before there are any systemic symptoms and before secondary bronchogenic lesions have developed. To wait for the lesion to give indubitable evidence of its activity usually means that the best opportunity for cure has been lost.

Both the medical profession and the public now require education in the need for early treatment of tuberculosis. When an early asymptomatic lesion is discovered, there is a tendency on the part of the physician to reassure the worried patient or his agitated parents. In some instances, unfortunately, the reassurance takes the form of denying either the existence of the lesion or its significance. This opinion is usually given after a physical examination fails to reveal an abnormality. When there are few symptoms, or none at all, it is very difficult to convince the patient of the necessity of treatment over a period of months. Consequently, many of these cases will refuse not only to enter a sanatorium, but, also, to follow a routine of bed rest at home. It is only through education of the public in the seriousness of active minimal lesions that this obstacle will be overcome.

The basis of treatment in pulmonary tuberculosis is bed rest, and this applies to all active cases regardless of the size of the lesion. The sooner and more strictly this rest can be instituted, the more effective it is likely to be. The younger the person, the more likely the labile lesion, and the greater the need for prolonged rest.

The great advantage of the rest "cure" in a sanatorium has been amply proved and every effort should be made to have these cases hospitalized. A very important function of the sanatorium is the education of the patient. He is given a complete understanding of his disease; this is necessary for anyone suffering from a chronic affliction. The chronic, relapsing character of the disease is emphasized, and he is taught the logic of a routine of rest and regulated activity. It is impossible for the physician to satisfactorily instruct the patient when treatment is carried out in the home. It is necessary not only to get the patient well, but to keep him well; and this can be accomplished only by a patient's thorough education in the importance of the proper rest routine that must be adhered to for the remainder of his life.

An initial period of two to four months of strict bed rest is desirable. The length of sanatorium care varies, of course, but usually a period of six to nine months is sufficient. Most patients can then gradually resume their normal activities, but definite limitations for several years are usually necessary. If, because of socio-economic reasons, a prolonged period of modified rest cannot be obtained, pneumothorax is indicated in order to safeguard the patient after his discharge from the sanatorium. If a lesion fails to respond satisfactorily to bed rest alone, or if an increase in the disease occurs, pneumothorax is then indicated. However, because of the excellent therapeutic response of the majority of white patients to bed rest alone, and because of the occasional hazard of pneumothorax, this procedure is not recommended as a routine measure. In the negro, because of his lack of natural resistance, every active minimal lesion should have pneumothorax in addition to bed rest.

Because of the shortage of beds for tuberculous patients in this State, it is impossible to have all of these cases admitted to a sanatorium. Consequently, in many cases the private physician must assume the responsibility of carrying out the routine of rest in the home. With the prospect that early tuberculosis will continue to be discovered in increasing numbers, every effort should be put forth to make sanatorium care easily accessible to these cases. Eradication of tuberculosis depends upon adequate treatment of all tuberculous lesions. This can be accomplished only by proper sanatorium facilities. It serves no useful purpose to carry out an extensive

case finding program to discover early tuberculosis unless we are prepared to treat it adequately.

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### Medical and Surgical Relief.

Mr. Arthur Kunizger, treasurer of the Medical and Surgical Relief Committee, has announced that for the six month period ending December 31, 1944, the Committee's donations to 21 countries including the United States, amounted to \$43,669.87.

The territory covered by the Committee has increased as the number of liberated countries has increased, and contributions now reach France and Italy. United States tops the list of beneficiaries with \$16,386.48 worth of medical, surgical and dental supplies of which the U. S. Navy got \$3,542.13, the U. S. Army \$1,025.40 and various civilian hospitals and welfare agencies the balance of \$11,818.95. The greatest number of shipments for this period went to China and India, while the most valuable single contribution amounting to \$4,951.76 went to L'Entre Aide Francaise for the relief of French children.

### Surgeon General Stitt Honored.

A gold medal and an honorarium of \$500 for outstanding service in the field of tropical medicine were presented on February 5, in New York to Rear Admiral Edward R. Stitt (retired), former Surgeon General of the United States Navy, by the American Foundation for Tropical Medicine. The presentation was made on behalf of the Foundation by Col. Richard Pearson Strong (M.C.), director of tropical medicine at the Army Medical School, Washington, D. C., and recipient of last year's award, before representatives of business, medicine and educational institutions.

In conferring the award, Colonel Strong said that "Rear Admiral Stitt is an exponent of scientific truth in his medical publications and reviews. His leadership, inspiring example and devotion to work in the field of tropical medicine through many years have justly won for him the epithet of 'Father of Tropical Medicine in the United States'."

The medal and honorarium were established in 1944 through a gift by the Winthrop Chemical Company. Known as the Richard Pearson Medal and bearing a profile of Dr. Strong on its face, it is to be awarded annually for distinguished service in tropical medicine.

### Protein in Soy Milk Approximate Utilization of Egg Protein.

Investigations recently conducted at Wayne University in Detroit have shown the soy proteins in Mull-Soy to have an average true digestibility of 89.6 per cent and an average biological value for maintenance of 95.6 per cent, compared with egg protein as 100 per cent.

The findings of this study, using adult human subjects, were published in a recent issue of the *Journal of Nutrition*, **28**:209, 1944. The method of Murlin and associates was used to determine biological values.

Mull-Soy, a product of The Prescription Products Division of the Borden Company, has been used extensively for infant feeding, and also for children and adults, as a palatable, well-tolerated and easy-to-digest milk substitute.

## DIPHTHERIA IN NINETEEN DAY OLD BABY—CASE REPORT\*

CATHERINE W. R. SMITH, M.D.,

Formerly Medical Officer, U. S. Public Health Service at Abingdon, Virginia; now with  
Muscogee County Health Department;  
Columbus, Georgia.

The peak incidence of diphtheria is ordinarily given as between two and five years of age. A transitory period of life during which the child enjoys an almost complete protection against attacks of diphtheria is given as the first six or nine months after birth. It is generally thought that insusceptibility of the new born baby is due to passive antibody transfer from the mother (through the maternal blood and through the milk).

Some physicians are so strong in this belief that they have told mothers of small infants (where older children had diphtheria in the home) that it is absolutely impossible for the infant to contract the disease.

I wish to present a case report which is an exception to the above opinion. It is a case of diphtheria occurring in a nineteen day old breast-fed infant where the mother was found to be Schick negative. To date this is the youngest case of diphtheria I have been able to find on record.

## REPORT OF CASE

A. R.—A white, male infant (born September 18, 1943) was taken when he was nineteen days old (October 7, 1943) to the local physician for treatment of what the parents believed to be a cold. They told the physician the infant's nose was "stopped up" and he "felt hot". The physician found the child to have excessive mucous discharge from the nose, and noisy breathing. He prescribed a diaphoretic and sedative.

The infant showed no improvement; consequently, two days later (October 9, 1943) the mother took him by train to another physician about fifteen miles distant. On physical examination, the physician stated, the child appeared to be extremely sick. The temperature was 101°. The skin turgor was poor. There was a bloody-purulent discharge from the left nostril with a distinctive and characteristic odor of Klebs-Löffler infection. The throat was injected but showed no membrane. A nasal swab was taken at this time and mailed into the State Laboratory about

thirty miles distant; the swab reached the laboratory the next day. It was reported positive for diphtheria.

The next day the local physician gave the infant 1000 units of diphtheria anti-toxin.

The infant's clinical symptoms cleared completely in about ten days after anti-toxin was given, but he carried consistent positive throat and nasal swabs until December 21, 1943 (approximately two and one-half months).

On investigation of the home by the Health Department, a five year old brother of the infant was found to have a positive throat swab for diphtheria; and a history of this boy revealed the fact that he was ill at the time the infant was born, with temperature, nasal obstruction, difficulty in swallowing food, and a cough. The father stated that pieces of membrane came from the boy's nose on several occasions. A physician was not called for the boy. He had been in the room and played around the infant. He carried a positive throat swab until November 4, (which was probably around six weeks).

At the age of four and one-half months a Schick test was done on the infant; this was entirely negative. It was repeated at the age of eight months with negative results.

A Schick test was done on the mother, and found to be negative. Since it was not done until recovery of the infant we are merely assuming that she carried a negative test previously. (She was apparently well and healthy during the child's illness and had a negative throat swab).

At the time a Schick test was done on the infant, other members of the family were tested. The five year old brother, of course, had a negative Schick test. One sister, a nine year old school girl had a positive Schick test, although she had two doses of toxoid previously. Her throat swab at the time of the infant's illness was negative. A two year old sister had a positive Schick test. These Schick tests were done four months after the infant's illness.

## COMMENT

Although this is a typical case of nasal diphtheria, it is interesting from the standpoint of the age of the

\*This paper has been approved for publication by the Surgeon General of the United States Public Health Service.



child. It is the youngest case I have been able to find on record.

It is the general opinion of the medical profession that it is difficult to establish immunity in an infant by injections of vaccines (etc.) before it is six months of age; consequently, no immunizing procedures are recommended before this age. In this particular infant it appears that natural immunity was established before this age (by the disease itself) as revealed by the Schick test.

It will be interesting to follow this child as it becomes older to see if this immunity is retained.

#### SUMMARY

A case of nasal diphtheria has been reported in a nineteen day old breast-fed baby. Schick tests showed that immunity was established before six months of age by an attack of the disease itself.

NOTE. Dr. Charles Clendenen, of Damascus, and Dr. Heinz C. Meyer, of Konnarock, have been of assistance in the preparation of this report by submitting information on the physical findings.

#### New Books.

The following are recent acquisitions to the library of the Medical College of Virginia and are available to our readers under usual library rules: The Arlington Chemical Co.—Proteins and amino acids. 1944.

Bailey, Percival—Intracranial tumors of infancy and childhood.

Beals & Brody—Literature of adult education.

Beck, S. J.—Rorschach's test. I. Basic Processes.

Blackfan, K. D. & Diamond, L. K.—Atlas of the blood in children.

Bogert—Deitetics simplified.

Boshes, B. ed.—A review of medicine by members of the Faculty of Northwestern University Medical School.

Bucy, P. C. ed.—The precentral motor cortex.

Cordell—The medical annals of Maryland, 1799-1899.

Dampier—A shorter history of science.

Fulton—Physiology of the nervous system. 1943.

Gardner, A. D.—Bacteriology for medical students and practitioners.

General surgery, v. 2, 1919; v. 2, 1920, 1928.

Goldzieher, M. E.—Adrenal glands in health and disease.

Gorton, D. A.—The history of medicine. In two volumes.

Grinker—Neurology. 1943.

Jacobs, ed.—The chemistry and technology of food and food products. v. 2. 1944.

Jones—Structure and function as seen in the foot.

Lex—Metabolism manual.

Lillie—The Woods Hole Marine Biological Laboratory.

Lloyd, J. U.—Elixirs.

Logan, R. W.—What the negro wants.

Martindale—The Extra Pharmacopoeia. v. 1. 22nd. ed. 1941, and suppl.

Moore—Personal mental hygiene.

Moulton, F. R.—The world and man as science sees them. Mumey—Quartercentenary of the publication of scientific anatomy—1543-1943.

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Myerson, M. C.—Tuberculosis of the ear, nose and throat: Including the larynx, the trachea and bronchi.

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Quigley—The national malnutrition. 1943.

Richards, H.—Universe surveyed.

Sachs, Hanns—Master and friend.

Scheinfeld—Men and women.

Schoengold, ed.—Encyclopedia of substitutes and synthetics.

Stokes, Beerman and Ingraham—Modern clinical syphilology.

Taber, C. W.—Taber's dictionary of gynecology and obstetrics.

Taylor, G. W. and Nathanson, I. T.—Lymph node metastases. Incidence and surgical treatment in neoplastic disease.

Templeton, F. E.—X-Ray Examination of the stomach: A description of the Roentgenologic anatomy . . . duodenum.

Thacher—Military Journal of the American Revolution. Transactions of the American Surgical Association. Vol. LXII, 1944.

Transactions of the Wisconsin Academy of sciences, arts and letters. v. 35, 1943.

U. S. Grant Post No. 327—In honor of Lewis Stephen Pilcher.

Wendt, G.—Science and the world of tomorrow.

Wiggers, C. J.—Physiology in health and disease. 1944.

Winthrop Chemical Co.—Penicillin. Annotated bibliography. 1944.

Yearbook of General Medicine—1944.

## CORRESPONDENCE

**Policies on Health Services in the School and Community Health Programs.**

After being informed of the action of the Council at its meeting on February 1 (page 134), Major Graves wrote Dr. Mulholland the following letter:

STATE BOARD OF EDUCATION

Richmond 16

February 21, 1945.

H. B. MULHOLLAND, M.D.,  
President, Medical Society of Virginia,  
Charlottesville, Virginia

DEAR DR. MULHOLLAND:

In talking with a member of your association committee concerning paragraph 2, in the resolutions you have recently adopted,

"Disapproves equally all other aspects of this project as carried out in the experimental counties."

I would like to make the following statement:

The Policy under which we are working in the school-community health program in the public schools has been discussed by the State Department of Health and numerous physicians over the State.

The action, which was taken in disapproving the project, as far as I can determine, was based on a misunderstanding caused by a misinterpretation in the field, giving reason for a belief that we were not living up to our established policy.

This misunderstanding has been cleared up with those concerned and I respectfully request that the resolution be reconsidered so that the project can go forward according to the policy with the cooperation of the Medical Association.

Sincerely yours,

ELIOT V. GRAVES,

*State Supervisor, Health Education  
and Director of the Project.*

The following is statement of the policy which the State Department of Education is endeavoring to follow, as outlined by Major Graves:

Health Service, which includes diagnosis and treatment, is a function of medical and public health professional personnel, and is not a function of educational personnel.

In the functioning of a school-community health program, an initial approach to medical personnel shall be made with the county health officer, and the public health

officer where such exists, before definite plans are made to promote the correctional work. All local physicians should be approached in order to ascertain to what extent they are able to render health services over and above their regular practice. Care must be taken to prevent the parent or pupil from expecting the impossible in the way of health service.

Where hospitalization of an individual is under consideration, it should be arranged on the basis of the diagnosis and advice of the family physician. Physicians should have a knowledge of arrangements, what surgeons are rendering the service, and should indicate their choice of operator. In cases where family physicians cannot be designated, a local physician or public health officer should make the diagnosis. The general policy assumes that health services should be paid for, fees being determined by local medical personnel.

**A Family Doctor Speaks.**

TO THE EDITOR:

This is a true story. The setting: the coal area in West Virginia. The time was one o'clock in the morning. Chief character: a doctor investigating socialized practices, and on a salary paid by funds collected by a prepayment plan. His telephone awakened him. He had treated fifty people the previous day and was tired. The message was a sick call at a particular house. He dressed, went out, got his car and visited the patient. This was the conversation:

"What is the trouble?"

"That is why we sent for you—to tell us."

"What is the complaint—do you have a cold, cough, pain or what?"

"I have pain in the stomach," said the young woman, lying in bed.

"How long have you had the pain?" asked the physician.

"Only tonight, I went to the movies before seven o'clock, got home after twelve and went to bed."

The doctor took the temperature which was normal. Listened to the chest and heart—both were normal. Pressed over the abdomen and found no tenderness or soreness to explain the pain complained of.

"It did not require five hours to see the show, did it?" observed the medic.

"Oh, I saw it through twice," boasted the patient.

"You mean that you sat upon those hard folding-

chairs through two shows?" questioned the doctor.

"Yes" was the answer.

"If you were well enough to accomplish that feat why wake me up? You have no sickness that I can find."

"Well, that is why you are a doctor—to tell people if they are sick. That's what you are paid for."

"I am certainly not here to treat well people. Cases like yours are probably reasons why doctors come and go rather frequently here and might eventually prevent the medically minded from going into the profession at all."

Exit the doctor.

I know this is a true story because the writer was the medic.

This is not an isolated circumstance but such absurd and useless calls for medical service occurred many times every day. Prepayment plans such as insurance, cooperatives, payroll deductions to boards of trustees or Social (In-) Security all lend themselves to promote the irresponsibility and the lack of personal restraint and conservation on the part of the contributor.

The pool of funds belongs to no one. The more the patient seeks benefits the more he gets for his money. The contributor becomes a patient because he wants something back for something paid. A stipulated benefit or a certain allowance of units of care will result in more and more people consuming various allowances simply because they paid and not because they really had need of any benefit. The managers of the fund calculated the fee-cost on the basis of current rates established by people paying from their own pocket and not from a pool of funds which belongs to each one as much as anyone. Consequently, over-use results in periodic increases of fees, premiums, payroll deductions, or tax increases.

Fee for service means that the doctor can charge a fee for every house call, office call, and every other service for which the fund will pay a fee. Why should we restrain the patient from making ten visits when six would be sufficient to satisfy the patient's idea of adequate treatment if compensation is from the patient's pocket rather than a pool? No budget can stand it.

So what happens? The budget managers try to make the plan work by cutting fees, limiting services for particular cases, raising the rates more which creates more demands for what is allowed to the patient. Sooner or later the entire situation is out

of the hands of both doctor and patient with the service entirely to the budget rather than to the patient.

This is the crux of the whole matter. Today we find the doctors literally "selling out" medicine. For once this socialization road is traveled *at all* there is no turning back. Another error is made to attempt the correction of the preceding one and the whole matter becomes bankrupt.

Doctors, of all people, should know human nature. Let's don't wake up to it too late. The art of medicine has edged over to make room for the science of medicine. Now both art and science are threatened with displacement by the business of medicine.

May I call attention to the words of Walter Pryll, general medical counsellor to the International Labor Office, speaking at a convention at Dresden in 1932: "The institutions of insurance which have the responsibility of distributing services to the insured and maintaining the financial balance of their budget should have the right to control the patient and the physician."

Robert E. Neff, President of the American Hospital Association, stated in July 1938: "Hospitals have a primary obligation to provide and organize all the services necessary for the diagnosis, treatment and rehabilitation of the patient."

At the International Conference of National Unions of Mutual Societies and Sickness Insurance Societies, in their fourth general assembly held at Dresden, October 19, 1930, the official position was stated: "It is not the insured patient but the insurance institution which supports the cost of medical treatment." Referring to the independent practicing physician as the "small exploitation" the statement says further, "As these small exploitations are by far the most numerous and as there is no reason to expect their abolition in the immediate future, it is necessary to secure the advantages of the great exploitation (meaning the insurances) while using the small. The strict enforcement of the rules of economical treatment which may be obtained by a serious control of the medical service is insisted on in order to get rid, at least in part, of the inconveniences of the small exploitation."

Physicians of Britain have endeavored repeatedly to convince the public that practice under insurance interferes with the giving of adequate time and attention to patients.



The following figures show the per cent of total insured in England using services on average day, indicating the increase in the use of benefits of the physician:

1911—6%  
1921—14%  
1927—23%  
1935—28%

The insured employee paid 9 shillings in 1911 and the same in 1935 but obtained service  $4\frac{1}{2}$  times as frequently.

The study and paper work imposed upon the physician of Britain is in itself a chore and time consuming.

The insurance practitioner receives from the insurance the following items to regulate his practice:

1. Prescription books.
2. Certificate books of 3 kinds.
3. The National Formulary.
4. The Medical Benefit Regulations.
5. The Drug Tariff.
6. Memorandum on Keeping Medical Records.
7. Memorandum on Pregnancy and Parturition of Insured Married Women.
8. Memorandum on Tuberculosis.
9. Memorandum on Medical Certification.
10. Memorandum on the Duties of the Regional Medical Staff.

11. Report on the Definition of Drugs for the Purpose of Medical Benefit.
12. Forms of Notification that treatment has been afforded to insured persons presenting traveller's vouchers.
13. Envelopes for the transmission of medical cards.
14. Envelopes for the transmission of forms of medical records.
15. Forms of application for medical cards.
16. Continuation cards for use in connection with medical records.
17. Specimens of nine other forms.
18. Four circular letters addressed to practitioners.
19. Requisition form for more stationery.

A special guide book finally was prepared to guide the practitioner in accomplishing this maze of paper work.

The German physician spent three months in special instruction in paper work and forms.

The British Medical Association has recently thrown in the sponge and abdicated to the Beveridge Plan.

Is there no other solution of the 300 billion government debt than the self destruction of the last entrepreneur—The American Family Doctor?

ERNEST L. SHORE, M.D.

Harrisonburg, Va., January 2, 1945.

### Synthetic Male Sex Hormone by Mouth Relieves Premenstrual Distress.

Pointing out that about 40 per cent of normal women suffer a considerable amount of distress during their premenstrual period, S. Charles Freed, M.D., San Francisco, says in *The Journal of the American Medical Association* for February 17 that the administration by mouth of the synthetic male sex hormone, methyl testosterone, "is the surest and most convenient therapeutic [treatment] agent in this respect."

He says that "The disability of most of these women during this period is moderate and obviously affects chiefly their intimate social contacts. Nevertheless the subjective disturbances undoubtedly lead to inefficiency and a decrease in ability to concen-

trate. As the premenstrual distress averages about five days each month, it becomes apparent that there may be a huge economic loss when these relatively minor errors are summated. The disharmony in social relationships during the premenstrual period of suffering women is another factor of great importance. . . ."

Dr. Freed says that because relief of this condition is greatly beneficial from the standpoint of health, society and economics, more attention should be paid to it.

He explains that this distress can be relieved by a number of methods. Based on his studies he believes that "methyl testosterone administered once daily [by mouth] for from ten to seven days before the onset of menses is the surest and most convenient therapeutic agent for the relief of this condition."

## CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE

MEDICAL SOCIETY OF VIRGINIA

This patient (Case No. 241) was a white woman, 31 years old, para vi, who gave a history of five previous normal deliveries by a midwife. She had no prenatal care with this pregnancy, lived in an isolated area and, being attended by a midwife, went into labor two days before the physician was called. Labor was active and membranes ruptured during the second day. The cord prolapsed soon after the membranes ruptured. Morphine  $\frac{1}{2}$  gr. was given and patient sent to hospital.

On admission, she appeared to be acutely ill, complaining of severe pain in the upper abdomen. Temperature  $97^{\circ}$ , pulse 108, respiration 28. Pulse was irregular and poor quality. Transverse presentation was diagnosed.

One hour after admission, a stillborn infant was delivered by version and extraction. Chloroform anesthesia was used. Placenta was delivered spontaneously five minutes later. Pituitrin 1 cc. and coramin were injected. The shock was much worse after delivery and 1,000 cc. of 10 per cent glucose was given in the vein. This was followed by some improvement but pain in epigastrium was severe. Air hunger was treated by oxygen and another 1,000 cc. of glucose injected in the vein. Vomiting continued and a gastric lavage was given. Patient died three hours post partum.

This is classed as a preventable death. A transverse presentation if properly managed would not be expected to result in death. The death can be

primarily charged to the absence of prenatal care and then to the midwife who allowed labor to progress without a diagnosis. Recognition of abnormal presentation before the beginning of labor is one of the most important uses of prenatal care. When the patient arrived at the hospital, she was then in shock. This should have been treated before any attempt to deliver. Morphine and atropine hypodermoclysis followed by 10 per cent glucose in the vein would probably have been helpful. Plasma or blood transfusion would have been better. Apparently, she received 2,000 cc. glucose solution within a comparatively short time. This could be criticized as being excessive intravenous therapy.

Version and extraction hours or days after membranes ruptured exposed her to unusual risk of ruptured uterus which possibly occurred as she died three hours later after symptoms of severe hemorrhage. It is noted that the cervix was three fingers dilated and thick just before patient was admitted. As there was no presenting part or bag of waters to dilate cervix, it is probably that this condition persisted and contraindicated immediate extraction by any method. One member of the Committee expressed the opinion that after treatment of shock a Braxton Version would have been a suitable method, leaving extraction until dilatation occurred.

If the diagnosis had been made before labor an elective section would have given both mother and child excellent prospects of life and health.

**Wyeth Incorporated Opens Baltimore Office.**

Wyeth Incorporated, of Philadelphia, one of the largest ethical drug manufacturing houses in the country operating in the pharmaceutical, biological and nutritional fields, has opened a branch office and warehouse at 1125 West North Avenue, Baltimore, to handle distribution of Wyeth products throughout Maryland, Virginia, West Virginia and

the District of Columbia. A complete line of Wyeth pharmaceuticals, biologicals and nutritionals, including vitamins, will be carried at the new Baltimore branch and service will be provided on a 24-hour day schedule.

This brings to 15 the number of sales offices and branch warehouses now being operated by Wyeth Incorporated throughout the United States.

## THE COUNCIL MEDICAL SOCIETY OF VIRGINIA

The Council of the Medical Society of Virginia met at the Society's office in Richmond on February 1, 1945, with Dr. H. B. Mulholland, president, presiding. Others attending were: Dr. Julian L. Rawls, president-elect; Dr. H. B. Haag, vice-president; Drs. C. L. Harrell, Wm. B. Porter, J. L. Hamner, W. C. Akers, J. R. Gorman, A. F. Robertson, Jr., J. E. Knight, and F. H. Smith, councilors from the 2nd to the 9th Districts, inclusive; Dr. I. C. Riffin, State Health Commissioner; and Dr. M. Pierce Rucker, editor of the MONTHLY.

It was moved that the reading of the minutes of the October meeting of the Council be dispensed with and that they be accepted as printed in the December 1944 MONTHLY, pages 637 and 638.

Dr. Mulholland then appointed Drs. Porter and Akers as the budget committee of the Council.

In response to inquiry from the secretary, it was decided to buy one or more bonds in the next War Loan drive, this to be decided by the Budget Committee in accordance with the balance in the treasury at that time.

As Dr. Emmett, chairman of the Committee on Public Relations and Medical Service, could not be present, Dr. Mulholland said there had not been a meeting of the Committee for some time. The members have received a great deal of literature in regard to problems which have come up for discussion but at this time there seems nothing particular to add to what has been previously reported. He, Dr. Riffin and Dr. Rucker attended a regional conference in Washington, recently, to secure what information they could from the discussions, and he assured the doctors that the Committee will try to keep in touch with any developments.

Dr. Mulholland told of having received a letter from the Roanoke Academy of Medicine with respect to the license tax which the Council of that city proposed to impose upon physicians and other professional groups. He referred this to Mr. R. C. Duval, attorney for the Society, who had written an opinion to the Roanoke doctors.

He also told of a letter received from the Creative Arts Studio of Washington, asking permission to use photographs of a member of this Society in making a picture story on the "Country Doctor" for educational purposes, to be shown overseas and also in this country. He had advised that he felt there would be no objection to using it in an impersonal way, provided the doctor's name is not used. This decision was approved.

The next matter for discussion was a letter from Mr. Randolph Bruce, Jr., working under the War Manpower Commission, with regard to "Selective Placement for the Handicapped". The Commission wished the approval of their program by the Society so there might be no delay when individual doctors were contacted by the personnel of local offices with regard to completing Physical Capacities Appraisal Forms. It was not contemplated there would be much of this work as it would occur only when

a physically handicapped individual went to the United States Employment Service office in search of a job, as information with regard to veterans could be obtained from other sources than the family physician. Dr. Mulholland stated that the Committee on Public Relations and Medical Service and Dr. Porter, chairman of the Rehabilitation Committee, had looked into the matter quite thoroughly and they felt it should be approved as it was attempting to place physically handicapped people in jobs where they are best suited. To a question as to the fee schedule, Dr. Mulholland said he thought it probable that no fee would be paid by the Government. These people are, for the most part, unable to pay, but, wherever possible, they should pay the usual fee for such services. Motion was made that the Council approve the program in principle and that the physician should set his fee if the individual is able to pay; otherwise the service should be free. This was seconded and carried.

Major Eliot V. Graves,\* supervisor of Physical and Health Education for the State, had written the President of the program that the State Department of Education is promoting in a limited number of counties on an experimental basis, with the hope of making it a state-wide plan. One of the National Foundations is giving financial assistance in promotion of the work. The general plan, as outlined in a letter to the President by Major Graves, was to concentrate on three major objectives of community life: 1. School; 2. Health Services; and 3. Community Organizations. Discussion brought out the fact that the work had already been undertaken in Bedford and Charlotte Counties and that it had not worked out according to this plan. Dr. Gorman stated that the Lynchburg doctors had been consulted with reference to the project but that apparently physicians took no part in the examination of these school children. After having been picked out by the non-medical individuals concerned with the operation of the plan, they were then to be sent to ear, nose and throat specialists, alphabetically, for their tonsil operations. They were not allowed to select a physician of their choice. It was further stated that the project had not been coordinated with the activities of the State Health Department. In the practical operation of the plan, Dr. Gorman stated that he was absolutely opposed to it as it was being carried out. Following the discussion, motion was made that the Council

1. Approves the principle of health education in state schools;
2. Disapproves equally all other aspects of this project as carried out in the experimental counties;
3. Approves the examination of school children by competent physicians and the correction of remediable defects, and, further;
4. Is of the opinion that such a project as has been

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\*After being advised of action of the Council, Major Graves wrote Dr. Mulholland an explanatory statement which appears on page 130.



proposed and carried on should be supervised by the State Health Department.

This was seconded and carried.

Dr. L. Howard Shriver, president of the Ohio State Medical Association, had sent resolutions adopted by its Council with regard to the Ohio River Valley Water Sanitation Compact, and asked the Medical Society of Virginia to lend its support to this measure. It was the opinion of the Council that this applied equally to all waterways in Virginia, and it was moved and carried that this body approve in principle the resolutions of the Ohio State Medical Association in regard to anti-pollution of all waterways in the United States.

Recess was then taken for lunch, following which Dr. Mulholland read a letter from Dr. A. L. Miller, member of Congress from Nebraska, with regard to Bill HR-1391, which he is presenting in Congress, "To establish a Department of National Health", providing for a secretary of Cabinet rank as its head. He stated that there are some thirty-two federal agencies dealing with various phases of health, and he felt that a Secretary of National Health might consolidate these activities and eliminate some of the overlapping ones. Dr. Mulholland thought the idea good but saw nothing in it to provide that the secretary of such a department should be a doctor of medicine. Dr. Riggin said the American Medical Association had gone on record as approving such a department. Motion was made by Dr. Porter, seconded and carried, that this body favors the establishment of a Department of National Health with a secretary who is a doctor of medicine, further, that copies of this resolution be sent the senators and congressmen from Virginia, and Congressman Miller.

A letter was next read from Miss Gwen McWhorter, Health Education Director with the Virginia Tuberculosis Association, submitting a plan which she had discussed with Dr. Mulholland, proposing a Health Coordinating Committee for the State. This suggestion was based on the fact that there are a number of agencies in the State concerned with health and, though each has its own special aspects, all are more or less related. It was suggested that a Health Coordinating Committee should be composed of one member from each health agency in the State, official and non-official; that it should have no administrative authority; and that its chief purpose should be to unify the attack on health problems in Virginia. It might also serve as an advisory board with which the various agencies might discuss any contemplated health program. She and officers of the Association felt the Medical Society of Virginia would seem the appropriate group to take the initiative in such a movement. After discussion, the Council by motion approved this as an excellent idea but suggested that instead of setting up another agency the various associations adopt the State Health Department as the governing agency with one member from each organization forming the committee. This was seconded and adopted.

Dr. Harrell asked if anything had been done about the discussion in the last meeting of the House of Delegates with regard to vacant beds at the State Tuber-

culosis sanatoria. It was noted that this was referred back to the Tuberculosis Committee for their recommendation which should be made to the Council, with the Council to have authority to take up the matter with the Governor, Legislature, or do what they thought best. Dr. Riggin said it is not a question of money but that the State laws would not allow an increase of wages, and it was impossible to get sufficient help on account of the higher wages offered in war industries, and that this matter could not even "get to first base" without going through the General Assembly. It was the opinion of members that this should be deferred to the next meeting of the Council.

A subject of importance was the decision as to holding a meeting of the Society this year, as the Office of Defense Transportation had ruled that organizations planning to hold conventions, to be attended by more than fifty persons, after the first of February of this year will have to show how the war effort will suffer if the meetings are not held. After discussion, it was left to the President to decide, about the first of May, whether, if circumstances permit, permission will be asked (1) to hold the State meeting, or (2) to hold a meeting of the House of Delegates, or (3) to simply hold a meeting of the Council. It was suggested that there might be one delegate from each component society but Dr. Smith felt this might not be legal as the Constitution specifically stated that the Council shall have charge of business affairs of the Society when the House of Delegates is not in session, and one member from each component society would not legally form a House of Delegates. Dr. John O. Boyd, general chairman for the Roanoke meeting, had suggested the week of October 21st as a good time for the meeting, so it was decided to ask him to see that provisional reservation is made for this date until the first of May for at least the Council meeting.

The American Association of Physicians and Surgeons with headquarters in Gary, Indiana, has recently been seeking approval of physicians, although it has not been approved by the American Medical Association, and has no connection with the National Physicians Committee which was endorsed by the House of Delegates of this Society at its last meeting. Motion was adopted that the Council go on record as opposing the policy of the American Association of Physicians and Surgeons and any other organization with similar constitution and by-laws.

Dr. Smith stated that it often happens that doctors do not read the MONTHLY as promptly as they might and suggested that a letter or card be sent each member, calling attention to the Council proceedings when published. This was approved.

The President and others felt there were several sections of the By-Laws of the Society which should be amended and Dr. Mulholland agreed to bring these to the attention of the Judicial Committee.

There being no further business, the meeting adjourned.

Approved:

H. B. MULHOLLAND,

*President.*

AGNES V. EDWARDS,

*Secretary.*

February 12, 1945.

## PUBLIC HEALTH

I. C. RIGGIN, M.D.,

*State Health Commissioner of Virginia*

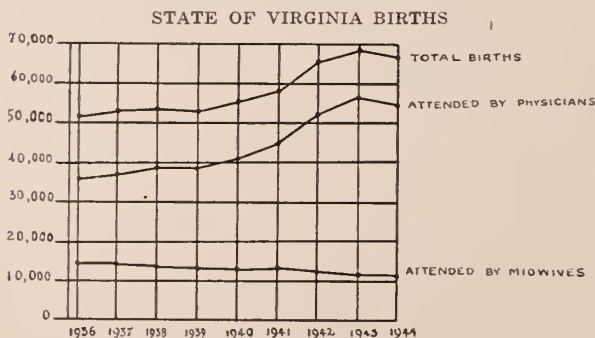
The report of the Bureau of Communicable Diseases of the State Department of Health for January 1945, compared with the same month in 1944, follows:

	January 1945	January 1944
Typhoid and Paratyphoid Fever.....	4	5
Diarrhea and Dysentery .....	242	119
Measles .....	60	990
Scarlet Fever .....	359	206
Diphtheria .....	26	23
Poliomyelitis .....	4	1
Meningitis .....	24	68
Undulant Fever .....	3	4
Rocky Mountain Spotted Fever.....	0	0
Tularemia .....	2	7

## BIRTH BY ATTENDANCE AT DELIVERY

It is very interesting to note that attendance at delivery by physicians has increased steadily with a corresponding decreased attendance by midwives or others. This fact applies to both the white and colored groups. From preliminary compilations, there were 65,500 births in Virginia in 1944, with a provisional rate of 23.0 per 1,000 population. Physicians were in attendance at 54,365 or 83 per cent of the deliveries; midwives attended 11,135 or 17 per cent, according to provisional figures.

The marked increase in physician deliveries and decrease in those by midwives is significantly established by a comparison of the 1920 and 1944 figures—1920 being the first year in which figures by attendant were available. In 1920 physicians were in attendance at 63.4 per cent of *all* births, and midwives at 35.3 per cent. In 1944 the ratio of

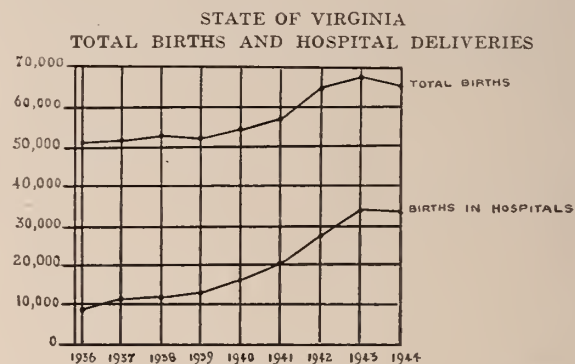


physician deliveries reached 83 per cent or a gain of 31 per cent, while the midwife deliveries and those by others reached an all-time low of 17 per

cent or a decrease of 52 per cent.

The increase in births occurring in hospitals also is an exceedingly significant trend. While a reasonably larger number of hospital deliveries would be expected as a complement to the increase in physician deliveries, the increase in such deliveries (226 per cent) in 1943 over 1935 (the first year in which data was available for hospital deliveries) is highly gratifying. Provisional figures indicate an even greater increase for 1944.

That a rural problem in this connection still presents itself, however, is indicated by the fact that but 37.2 per cent of women in rural communities were delivered in hospitals in 1943 as against 75.1 per cent of those residing in urban districts. In urban localities 21,999 women had physicians in attendance, representing 90.7 per cent of the urban



total, with 2,246 or 9.3 per cent having midwives. Estimates for the year 1944 show comparable ratios. These figures are even more significant when it is realized that the population of Virginia at the U. S. census of 1940 was: urban 35.3 per cent; rural 64.7 per cent.

Undoubtedly, the economic advancement of both white and colored groups in the most recent years has been partly responsible for the increase in physician attendance and a corresponding decrease in that of midwives, to which fact the greater supervision and higher requirements of midwives must be added. Health education, through State, county and municipal clinics, plus the personal professional influence of the family physician for hospitalization, the development of prepaid hospitalization through insurance plans such as the Blue Cross, and the ability of physicians to give more efficient care in

the hospital rather than in the home, also have been most important factors.

There is every reason to believe that, with the postwar extension of health facilities in rural areas, a more general acceptance of various hospital in-

surance plans, and the continued enthusiasm of the medical profession for deliveries in hospitals, the present trends both in physician attendance and hospital deliveries will steadily and markedly increase.

## NEW MEMBERS

New members of the Medical Society of Virginia, since the list published in the February 1944 issue of the MONTHLY, are:

Dr. Joseph Long Alexander, Staunton.  
 Dr. Harry Lee Archer, Charlottesville.  
 Dr. Ernest Lynwood Bagby, Richmond.  
 Dr. Glenn H. Baird, Abingdon.  
 Dr. Wallace Edgar Baker, Richmond.  
 Dr. Bruno Barelare, Jr., Charlottesville.  
 Dr. Frederick William Barger, Salem.  
 Dr. Joseph Michael Barker, Arlington.  
 Dr. John Morgan Biedler, Harrisonburg.  
 Dr. William Nicholas Botts, Appalachia.  
 Dr. William Walker Butzner, Jr., Fredericksburg.  
 Dr. Carlton Jerone Case, Charlottesville.  
 Dr. Matilda Daugherty Chalkley, Richmond.  
 Dr. Peyton Moncure Chichester, Abingdon.  
 Dr. Hugh Wilfred Clement, Toms Creek.  
 Dr. Elizabeth Mickley Cover, Luray.  
 Dr. Robert Humber Cox, Jr., Lynchburg.  
 Dr. August Reynolds Crane, Norfolk.  
 Dr. Galen Glick Craun, Richmond.  
 Dr. Edgar Lee Crumpacker, Williamsburg.  
 Dr. Garrett Dalton, Radford.  
 Dr. Dexter Davis, Roanoke.  
 Dr. William Cole Davis, Lexington.  
 Dr. Hermann Diamant, Farnham.  
 Dr. Murray Dick, Newport News.  
 Dr. Thomas Henry Dickerson, Martinsville.  
 Dr. Malcolm Peel Dillard, Roanoke.  
 Dr. James F. Edmonds, Accomac.  
 Dr. Walter A. Eskridge, Richmond.  
 Dr. James Armstead Fields, Dahlgren.  
 Dr. Percy Ryland Fox, Richmond.  
 Dr. Andrew Frederick Giesen, Radford.  
 Dr. Conrad Louis Gossels, Mt. Jackson.  
 Dr. Isa Costen Grant, Franklin.  
 Dr. George Smith Grier, III, Newport News.  
 Dr. DuPont Guerry, III, Richmond.  
 Dr. Lewis Clay Haley, Axton.  
 Dr. John Hampton Hare, Warsaw.  
 Dr. Lucy Scott Hill, Madison.  
 Dr. Paul Swanson Hill, Harrisonburg.  
 Dr. Erwin Leopold Hirsley, Jewell Valley.  
 Dr. Robert Carhart Hood, Arlington.  
 Dr. Joseph David Hough, Franklin.  
 Dr. Lawrence Alexander Jacklin, Falls Church.

Dr. Wycliffe Charles Jackson, Amonate.  
 Dr. Frederick Matthes Jacobs, Roanoke.  
 Dr. John Randolph Kight, Norfolk.  
 Dr. George Henry Kinser, Waynesboro.  
 \*Dr. Edward W. Kunckle, Richmond.  
 Dr. Claude Marshall Lee, Charlottesville.  
 Dr. Randolph Leigh, Jr., Charlottesville.  
 Dr. Hans Lent, Draper.  
 Dr. Juan Martinez-Galindo, Charlottesville.  
 Dr. Verlin Estelle Miles, Arlington.  
 Dr. Dorothy Diehl Moore, Petersburg.  
 Dr. James Keith Morrow, Radford.  
 Dr. Hugh Page Newbill, Charlottesville.  
 Dr. Charles Thomas Nicholson, Jr., Alexandria.  
 \*Dr. Carney Cooper Pearce, Jr., Charlottesville.  
 Dr. Paul Chester Pearson, Aylett.  
 Dr. Fred R. Person, Roanoke.  
 Dr. James Guy Price, Charlottesville.  
 Dr. Edward S. Ray, Richmond.  
 Dr. Duvahl Boone Ridgway, Roanoke.  
 Dr. William Mayer Robinson, Richmond.  
 Dr. Albert John Russo, Salem.  
 Dr. William Callier Salley, Norfolk.  
 Dr. Ulvert Ottway Sanders, Grundy.  
 Dr. Samuel Gilmore Saunders, Waynesboro.  
 Dr. Ernst Schweiger, Portsmouth.  
 Dr. Robert James Scott, Onancock.  
 Dr. Stuart Wray Selden, Kents Store.  
 Dr. E. L. Sikes, Pound.  
 Dr. Herman Ivan Slate, Arlington.  
 Dr. Catherine W. R. Smith, Abingdon.  
 Dr. Harry LeCato Smith, Jr., Charlottesville.  
 Dr. Hartwell Graham Stoneham, Waverly.  
 Dr. John Brendan Sullivan, Arlington.  
 Dr. John Warrick Thomas, Richmond.  
 Dr. John T. Thornton, Charlottesville.  
 Dr. John Randolph Travis, Fredericksburg.  
 Dr. Edward Holland Trower, Eastville.  
 Dr. John Alden Vann, Charlottesville.  
 Dr. Leo Carl Varden, Arlington.  
 Dr. Elmar Stebbins Waring, Fairfax.  
 Dr. Nancy Safford Whitticar, Fredericksburg.  
 Dr. John Franklin Williams, Richmond.  
 Dr. William Christopher Williams, Hillsville.  
 Dr. Patrick Henry Winston, Clarksville.  
 Dr. John Alexander Wright, Jr., Doswell.

\*Moved from Virginia and resigned.



## WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

*President*.....MRS. PAUL C. PEARSON, Aylett  
*President-Elect*.....MRS. P. M. CHICHESTER, Abingdon  
*Recording Secretary*.....MRS. C. C. SMITH, Norfolk  
*Corresponding Secretary* MRS. HAWES CAMPBELL, Turpin  
*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond  
*Chairman, Press and Publicity*.....MRS. A. G. SHETTER,  
 Richmond.

### Woman's Auxiliary to the Medical Society of Virginia.

The mid-winter meeting of the Board was held in Richmond on January 31, with Mrs. Paul Pearson of Aylett presiding. There were twelve members present and these represented six auxiliaries. Mrs. Southgate Leigh, Jr., acted as secretary in the absence of Mrs. C. C. Smith.

Reports were presented from the officers and various committees. The attendance trophy was presented to the Accomac-Northampton Auxiliary, the presentation being made by Mrs. Hawes Campbell to Mrs. J. L. DeCormis for the Auxiliary. This award is based on the percentage of members present at all meetings, which was 67.7 per cent during the year 1943-4. Attention was called to the fact that this Auxiliary has received the trophy twice previously, though the membership is composed of members living in a seventy-five mile area.

Motion was adopted that the annual meeting scheduled for Roanoke in October 1945 be canceled, subject to approval of the Advisory Council. This was done in view of the request from the National Office of Defense Transportation that no convention be held by organizations whose attendance is expected to exceed fifty.

The president appointed the Nominating Committee as follows: Mrs. W. Clyde West, chairman, Mrs. William Lett Harris, Mrs. E. Latane Flanagan, and Mrs. J. L. DeCormis.

#### LOUDOUN-FAUQUIER AUXILIARY

Mrs. D. T. Saffer, secretary of this Auxiliary, reports that due to the gas shortage and distances involved, they have had to discontinue meetings for the duration. However, they are paying State and National dues and Maintenance Fund. All members are very active in defense work in their respective communities. Their president, Mrs. Stewart McBryde, is a Gray Lady, and is connected with

the hospital at Fort Belvoir, where she finds the work most interesting.

#### RICHMOND AUXILIARY

Twenty-four members of the Woman's Auxiliary to the Richmond Academy of Medicine enjoyed a delicious luncheon and Christmas party on December 15 at the Academy Building.

At the regular monthly meeting held January 18, the Auxiliary voted to contribute \$10.00 to the "March of Dimes" drive, \$5.00 to the State maintenance fund and \$36.50 to the Leigh-Hodges-Wright Memorial Fund.

The guest speaker for this meeting was a local artist, Miss Willoughby Ions, who spoke informally on designing toys for children and on creating expressions on toys. She showed samples of her toys and of her china and tapestry paintings.

The meeting was enjoyed by twenty members and one visitor.

EVELYN ROWE, *Recording Secretary.*

#### NORFOLK AUXILIARY

Since the December meeting and report, the activities of the Auxiliary have been as follows:

A Supper Party at the Norfolk Yacht and Country Club, January 10, for the members of the Norfolk County Medical Society, their wives and Medical Officers in the Armed Forces stationed there with their wives. Slightly more than a hundred attended, among whom were twenty-four of the above-mentioned guests.

The Public Relations meeting of the Auxiliary was held February 7, the president, Mrs. Southgate Leigh, Jr., presiding.

There were present nineteen members, fourteen representatives of women's civic organizations, and wives of five Service Medical Officers.

The Health Education chairman reported that she had received from the A.M.A., and distributed posters among the city schools, announcing the radio programs which are to be sponsored by the A.M.A.

The secretary read a letter from Mrs. Wright, chairman of the Leigh-Hodges-Wright Memorial Bed fund, thanking the Auxiliary for its contribution.

Mrs. Charles Lupton, chairman of a special com-

mittee, announced that she had sent Christmas greetings to the Norfolk County Medical Society members who are in the Armed Forces and had received an answer from one.

The president reported that she had attended the State Board meeting in Richmond, January 31, as well as a recent meeting of the Tidewater Camp and Hospital Association.

A letter was read from Mrs. Paul Pearson, State President, accepting an invitation to attend a luncheon meeting of the Auxiliary on April 9. At this time Doctors' Day will be observed and the Health Education chairman will present Dr. Harrell, a Norfolk author, who has done research in nutrition.

In the absence of the Public Relations chairman, Mrs. Brock Jones, Mrs. R. Bryan Grinnan, Jr., introduced the speaker of the occasion, Lt. (jg) E. M. Vail, Hospital Corps, U.S.N., now stationed at the Naval Operating Base Hospital in Norfolk. She spoke on the part Physiotherapy is playing in the Rehabilitation of Service Men.

At the conclusion of the lecture, tea was served by the Social Committee. Mrs. Millard B. Savage is chairman of this committee and acted as hostess.

## BOOK ANNOUNCEMENTS

Books received are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

**The Marihuana Problem in the City of New York.** Sociological, Medical, Psychological and Pharmacological Studies. By the Mayor's Committee on Marihuana. The Jaques Cattell Press, Lancaster, Pennsylvania. 1944. xii-220 pages. Cloth. Price \$2.50.

**The Abortion Problem.** Proceedings of the Conference Held under the Auspices of the National Committee on Maternal Health, Inc., at the New York Academy of Medicine, June 19th and 20th, 1942. Howard C. Taylor, Jr., M.D., Conference Chairman. The Williams and Wilkins Company, Baltimore. 1944. xii-182 pages. Cloth.

**The Avitaminoses.** The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By WALTER H. EDDY, Ph.D., Emeritus Professor of Physiological Chemistry, Teachers College, Columbia University; and GILBERT DALLDORF, M.D., Pathologist of the Grasslands and Northern Westchester Hospitals, New York. Third Edition. Baltimore. The Williams and Wilkins Company. 1944. xi-438 pages. Cloth. Price \$4.50.

This book is an excellent and timely review of the vitamins, including their chemistry, functions, pathology of deficiencies, and methods of assay. The material is well arranged, easy to read, and up-to-date. Differentiation between animal and human effects are clearly made. It can be recommended to physicians as a specific antidote to both the emetic radio advertising of vitamin products, and the equally extreme nihilism arising therefrom.

However, just to prove that even these eminent authors have not written The Perfect Book, page 119 states that "Natural foods contain little or none of this vitamin" (D). This is incorrect. Such natural foods as salmon, fish and mammalian livers, and at times, eggs, do contain important amounts. Unfortunately, such foods do not form an appreciable part of the average diet.

R. J. M.

**Endocrinology of Woman.** By E. C. HAMBLIN, B.S., M.D., F.A.C.S., Clinical Professor of Endocrinology and Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine; Chief of the Endocrine Division and Endocrinologist, Duke Hospital, Durham, N. C. Charles C. Thomas, Springfield, Illinois. 1945. xii-571 pages. Illustrated. Cloth. Price \$8.00.

Part I describes the history, embryology, anomalies, anatomy, histology, secretory control, chemistry, physiology, and interrelations of the various endocrine glands. It is written in typical textbook fashion, but since it is fairly short, 88 pages, will be more readable to the medical student or the older doctor who feels in need of catching up, than the average textbook.

Part II deals with endocrine physiology at various stages of life.

Part III discusses clinical and laboratory methods. It is very complete, clear and concise.

Part IV deals with diseases of function of endocrine glands. There are a number of excellent pictures and adequate references which are all in English.

Part V discusses treatment of functional disorders and diseases of gynecological and obstetrical significance. The bitter antipathy to the use of androgens in the female is frequently stressed, as is also the avoidance of the use of unnecessary estrogens during and after the normal menopause. The clear explanation of therapy used, and the wide background of experience represented make the book a useful one for any doctor who treats women patients.

M. P. R.

# VIRGINIA MEDICAL MONTHLY

*Official Publication of the Medical Society of Virginia*

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,

*Editor Emeritus*

M. PIERCE RUCKER, M. D.,

*Editor*

AGNES V. EDWARDS

*Business Manager*

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No. 3

## The Canceling of Medical Meetings

WE question neither the authority nor the wisdom of the O. D. T. in canceling all meetings\* of more than 50 persons, or ones involving an overnight stay of those in attendance. Winning the war and winning it quickly is the most important thing for Americans at this moment. Everything necessary to attain that end, should be submitted to cheerfully. On the other hand, one should not lose sight of the fact that never before have medical meetings been so important. The health of the people is in the hands of a profession whose numbers have been reduced one-third. This means that each doctor must be as efficient as possible. In addition, new and potent remedies and technics are becoming available as never before. These are given wide publicity in *Time*, and *The Readers Digest*, etc., which over-emphasize the good, and say nothing of the bad effects. The indications, as well as the contraindications, must be learned, or the public will suffer. Drugs that are as powerful as the sulfa drugs and penicillin are capable of doing great harm when improperly used. In a recent journal there is a report of a near catastrophe from injecting penicillin into the cerebral ventricle. We must learn and learn fast what is of good repute. Medical journals are useful, but nothing takes the place of personal contact in the discussions of new problems. For instance, the journals have been full of the new pressure treatment of burns. A well-trained doctor in another city tried it with a plaster cast on the leg and foot, including the toes. Pressure gangrene resulted and the patient lost his leg. This would not have occurred had the doctor learned the technic from seeing instead of reading.

"Finally brethren: Whatsoever things are true; whatsoever things are honest; whatsoever things are just; whatsoever things are lovely; whatsoever things are of good report; if there be any virtue and if there be any praise, think on these things."

## Medical Aspects of Compulsory Military Training

A YEAR'S training in patriotism conducted by the Army or the Navy may be beneficial to our country in ways other than national defense. There was a time, not so many years ago, when the bringing together of great numbers of people was not

\*While this editorial was in the hands of the printer (February 13th) word came over the radio that between 800 and 900 members of the A. F. of L. were attending a meeting in Miami, Fla.



without danger. Until the present century, armies had more reason to fear disease than the enemy. This is no longer so. The "camp diseases", typhoid fever, typhus fever, and the dysenteries have been conquered. Modern sanitation and immunology have made army camps as safe as health resorts. So we may check off health hazards as an argument against compulsory military training.

What are the benefits that may be expected? In the first place, there will be a complete physical examination of each trainee as he reaches the age for training, something that is worthwhile in itself. There should be no rejectees in this examination, but rather a classification. The remedial defects would of course be corrected. Those with physical defects that cannot be corrected could be put in special camps suitable to their condition, just as backward children in the public schools are put in special classes. During the period of training, health education could be taught in a very practical manner. At the end of the course the graduates would have a better idea of the value of a balanced diet, to mention only one item. They certainly would make a better showing physically than the freshman in college made before the war.

From a medical point of view there can be only one argument against compulsory medical training. Already the medical student, and presumably the same applies to other branches of technical training, reaches the period of usefulness to the public too late in life. Unless some steps are taken to telescope some of the necessary pre-technical training into the year of military training, the plan will make the doctor (or engineer) one year older when he begins practice.

Whether the training should be extended to girls is more debatable. All changes that modern civilization has inflicted upon women have had a tendency to minimize the influence of home. If girls are to be included, we hope that domestic science will have a prominent place in the curriculum.

#### Michael Underwood and the First Description of Infantile Paralysis

A RECENT request directed to the Richmond Academy of Medicine by Dr. Ludwig Hektoen, for a photostat of the first description of antero-poliomyelitis, which is reputed to be found in the first edition of Underwood's "A Treatise on the Diseases of Children", brought to light several interesting facts: First, that the earliest description of this disease is to be found in the second edition, and not in the first edition as is commonly believed; Second, that the first edition is an extremely rare book. Evidently it was not available to Garrison when he wrote his *History of Pediatrics* for he erroneously stated (p. 78) that the 1784 edition contains the first description of poliomyelitis. The only copy of the 1784 edition listed in the Union Catalogue of the Library of Congress is that belonging to the Richmond Academy of Medicine. The Army Medical Library and several other libraries have copies of the second (1789) edition. The earliest edition in the collections of the Library of Congress is that which was published in Philadelphia in 1793.

The first edition is a little book of 288 pages, 16½ by 9¾ cm. Its title page reads: A/ Treatise/ on/ The Diseases of Children,/ With Directions/ For the Management of Infants/ From the Birth;/ Especially/ Such as are brought up by hand./ By Michael Underwood, M.D.,/ Licentiate in Midwifery/ of the/ Royal College of Physicians, in London,/ and/ Practitioner at the British Lying-In/ Hospital./ *Ornari Res ipsa negat, contenta doceri.* Hor./ London,/ Printed for J. Mathews, No. 18, Strand./ MDCCLXXXIV. Inscribed on the fly-leaf is "Sir John Elliott, Bart. With author's best Respects."

Dr. Hektoen sent us a typescript of the description of the disease from the second edition. There is nothing in the table of contents of the first edition that corresponds to this account and we went over the first edition page by page and found no such description. We are forced therefore to conclude that the description that occurs in the second (1789) edition is the earliest description of the disease. It was a comfort to find that the late Dr. John Rührhah (*Am. J. Dis. Child.* 40:1312,1930) came to the same conclusion.

Michael Underwood, 1736-1820, man-midwife, was born in Surrey. He studied at St. George's Hospital under Sir Caesar Hawkins and also saw something of the practice of John Freke. He studied for some time in Paris, and practiced for some years in Great Marlboro Street, London, where eventually he limited his practice to women and children. On April 5, 1784 he was admitted a licentiate in midwifery of the College of Physicians of London, and was the last survivor to bear the title, man-midwife. He was attached to the British Lying-In Hospital and attended the Princess of Wales at the birth of the Princess Charlotte. His treatise on the diseases of children was the best on that subject which had appeared in English. (D.N.B.)

That an obstetrician should write the best book on pediatrics seems strange to us today. However the combining of the two branches was common in England and this country in the eighteenth century. The teaching of obstetrics in our medical schools was always combined with some other branch. Thus the first professor of obstetrics in the United States was also the professor of anatomy. Dewees, the first American to write a *System of Midwifery*, also wrote a book on the diseases of children. Interestingly enough, Samuel Merriman, the great London obstetrician, edited and revised the 8th edition of Underwood's treatise on diseases of children.

It is natural that this combination should have begun in England, where the men-midwives and obstetricians have always been medically minded. In France on the other hand and in Germany, the surgical side of obstetrics was developed. It is true that the obstetrical forceps was invented in England, but it was done by a Frenchman. Paré re-introduced podalic version, and Sigault devised and performed the operation of symphysiotomy in France. In 1580 Rousset published a book on Cesarean section and reported fifteen cases. In the meantime in England William Harvey wrote a monumental work on embryology and 1774 William Hunter published his beautiful atlas on the human gravid uterus, while Charles White, Thomas Denman, John Clarke, and Alexander Gordon were making studies which Oliver Wendell Holmes later used so effectively to prove the contagiousness of puerperal fever.

Not all of Underwood's published work had to do with diseases of children. His "treatise upon ulcers of the legs; in which former methods of treatment are candidly examined and compared with one more rational and safe, proving that a perfect cure may generally be effected more certainly, without rest and confinement, than by the strict regimen in common use; with an introduction on the process of ulceration and the origin of pus laudabile. To which are added hints on a successful method of treating some scrophulous tumors, and the mammary abscess and sore nipples of lying-in women," appeared in 1783. This went through a number of editions and was translated into French and German. Of his treatise on the diseases of children the Catalogue of the Surgeon-General's Library lists some 16 or 17 editions: London 1789, London 1797, London 1799, London 1805, London 1819, London 1827, Philadelphia 1793, Boston 1806, Philadelphia 1818, Philadelphia 1841, Paris 1786, Paris and Montpellier 1823, Leipzig 1848, Philadelphia 1802, and London 1835.

### New York Medicine

WE are glad to welcome among our exchanges a new journal. Number one of Volume one of *New York Medicine*, the official publication of the Medical Society of the County, bears the date of January 5, 1945. In this day of manpower and paper shortage the appearance of a new magazine is an event. *New York Medicine* proposes to devote itself to promoting an understanding and tolerance towards the medical profession on the part of the public by making known the views, the needs and the philosophy of the physician. More specifically, it will summarize the major developments of scientific progress, report briefly and engagingly the developing viewpoints registered by the medical profession, record the important activities and accomplishments of the Medical Society of the County of New York, and provide a forum for the views and contributions of members and friends of the Society. If "*New York Medicine*" lives up to its program, it will justify its existence.

### Half-Truths

WE live in an age of propaganda and pressure groups and are subjected to a constant barrage of half-truths. Some are so obvious that they are merely amusing, but some are so nearly true that they are particularly annoying. For instance, we are told that cancer is a curable disease if it is seen early. Yet statistics show a constantly increasing cancer mortality until now it is a top ranking cause of death. A natural inference is that either the doctors are negligent or that there are too few of them. The proponents of Federal control of medicine use this as an argument for their plans. They hold that if good medical care were available to all the people, there would be no cancer deaths. Yet the chief surgeon of a great clinic died not so long ago of cancer of the stomach. Was this due to unavailability of diagnostic resources or surgical skill? An operating room supervisor developed a hopeless breast cancer. Was this because she could not get the best care? A leading cancer expert treated a college president for years for some intestinal trouble. Nevertheless, the college president died of unrecognized cancer of the liver. Was this because he lacked the means or the intelligence to seek treatment early? You might say that these are isolated cases and do not count, but they represent over 20 per cent of the cancers the editor has known about in the past few years.

Another half-truth that has wide credence, concerns fetal mortality in Cesarean section. Because a section is frequently done to save fetal life, the public and many doctors have the impression that there should be no fetal mortality incident to Cesarean section. Any statistical study will show the error of such a belief. In fact, the fetal mortality in section is, in round numbers, some 5 per cent, and one-third of this is difficult to explain.

We teach that eclampsia is a preventable disease and that a patient does not have it, if she has adequate care. Yet many of us have seen fulminating eclampsia when there have been no prodromal signs or symptoms, and when the patient has had good prenatal care. When such a case occurs, what does the public think of the doctor?

Two and two do not always make four in medical calculations. The late Dr. Whitridge Williams, when president of the American Association for the Prevention of Infantile Mortality, presented a study of neo-natal deaths. In 10,000 consecutive births at Johns Hopkins there were 705 infant deaths. The largest single cause of death was syphilis, which was responsible for 26 per cent. This was in 1915 when the Wassermann test was just being introduced. In fact, he stated that it was too expensive to use routinely on pregnant women when there was no suspicion of syphilis.



Nevertheless he instituted an intensive study to eradicate syphilis in expectant mothers. Five years later, in 1920, he again reported on the subject. Since his first report there had been 4,000 births with 302 neo-natal deaths (7.5 per cent) and 34 per cent of them were due to syphilis. The work was continued, and later when syphilis had been practically eliminated as a cause of infant death, the neo-natal mortality remained higher than one would expect from deducting the one-third that had been due to syphilis.

### PRESIDENT'S MESSAGE

THE Council held its mid-winter meeting in Richmond last month, the minutes of which may be found on pages 134-135. Due to the importance and general interest of many of the topics discussed, I think it advisable to emphasize and elaborate on several of these.

Aid to physically handicapped individuals in the general population, in order that they may secure employment in positions commensurate with their ability, is one of the projects of the War Manpower Commission and the United States Employment Service. This branch of the Government has asked that physicians cooperate with them in evaluating the physical status of these applicants. As a humanitarian contribution to the general welfare, it was felt that we should perform this service. It is anticipated that only a few will seek this examination, and an effort will be made to obtain a more simplified form for such examinations than the one now used by the Government.

Co-incident with improvement in our educational system in the State, health education in the public schools should also be strengthened and the Society wishes to cooperate in the betterment of this phase of school life. However, as indicated in the minutes, it is felt that the effort should be a co-ordinated one with the State Department of Health, and that any correlated examinations and operations should follow established practices.

An excellent suggestion has been made with reference to a co-ordinating committee composed of representatives of the various organizations interested in the multiple aspects of health throughout the State. Such a committee might logically save much waste motion occasioned by lack of concentrated effort. Even though this committee would have no power to act, an exchange of ideas should prove most valuable in solving future health problems.

Bringing together the various agencies of the National Government concerned with Health, some thirty-two in all, under one head, dignifying this position with cabinet rank and appointing a physician to that office seems inevitable. Therefore, our active support of the principle should be given. Indeed, we might seriously think of a similar set-up in our State organization, centralizing all of the efforts in caring for the physical welfare of the citizens of this Commonwealth.

Several changes in the by-laws were discussed. 1. Abrogation of the rule which prevents the election of a physician living in the place of the annual meeting to the presidency. 2. Make the retiring president a member of the Council. 3. Have the annual address made by the President-elect. These will be referred to the Judicial Committee for study and recommendations.

In view of the recent ruling from the Office of Defense Transportation with reference to meetings, considerable discussion took place over our proposed annual meeting in the Fall. The consensus of opinion was that no request to hold such a meeting should be made unless transportation conditions changed materially for the better by May 1st.

At any rate, a request to hold a meeting of the House of Delegates will be made. Should this be refused, the Council will meet and transact the business of the Society.

Not discussed in the Council but of considerable importance is the introduction of a recent bill in Congress by Representatives Hill and Burton, which provides for a survey of the present hospital facilities in the United States and an appropriation of \$100,000,000 for help in the construction of non-profit hospitals throughout the country. These will be improved and constructed according to the need as indicated by the preliminary survey. The term "hospital" is broadly interpreted and includes so-called "Health Centers" in rural areas. The bill is now in Committee.

Each and every one of you is asked to concern yourselves with the rapidly changing stage of medical care and to take an active, positive interest in solving these important problems.

H. B. MULHOLLAND, M.D.

## Societies

### Virginia State Board of Medical Examiners.

The following applicants were granted licenses to practice medicine at the meeting of the Board held September 19-22, 1945:

Dr. Jane Beery Adams, Richmond.  
 Dr. Raymond Atwell Adams, Richmond.  
 Dr. Nathaniel Edward Adamson, Jr., Charlottesville.  
 Dr. Leon Harper Alexander, Petersburg.  
 Dr. Woodland Ward Anderson, Bethlehem, Pa.  
 Dr. Jerome E. Andes, Pulaski.  
 Dr. Robert Eugene Balsley, Charlottesville.  
 Dr. Earl McKenzie Bane, Charles Town, W. Va.  
 Dr. Norvell Belt, Washington, D. C.  
 Dr. Henry Bernstein, Bethesda, Md.  
 Dr. Geoffrey H. Binnevel, Charlottesville.  
 Dr. William Branch Bishop, Richmond.  
 Dr. Robert E. Blount, Ft. Lauderdale, Fla.  
 Dr. Robert F. Bondurant, Roanoke.  
 Dr. Irving Bornstein, Welfare Island, N. Y.  
 Dr. James Horace Boyd, Norfolk.  
 Dr. Charles Bunyan Bray, Jr., Galveston, Texas.  
 Dr. William M. Brock, Newport, R. I.  
 Dr. Waldo Emerson Burnett, Arlington.  
 Dr. Alvin Lafayette Cain, Fairmont, W. Va.  
 Dr. James Leonidas Camp, III, Franklin.  
 Dr. Mathew Lee Carr, LaGrange, N. C.  
 Dr. L. Huntley Cate, Arlington.  
 Dr. Matilda Daugherty Chalkley, Richmond.  
 Dr. Walter Randolph Chitwood, Charlottesville.  
 Dr. Oscar Withers Clarke, Jr., Petersburg.  
 Dr. Edgar Lawrence Compton, Washington, D. C.  
 Dr. George Marion Cooper, Cincinnati, Ohio.  
 Dr. Otis Wilson Corder, Huntington, W. Va.  
 Dr. Charles Granville Craddock, Jr., Rochester, N. Y.  
 Dr. Bennett Rudolph Creech, Philadelphia, Pa.  
 Dr. Courtland Harwell Davis, Jr., Alexandria.

Dr. Thomas Newman Davis, III, Bethlehem, Pa.  
 Dr. William Cole Davis, Lexington.  
 Dr. Joseph Jenkins Delfino, Norfolk.  
 Dr. Robert Russell Dennison, Richmond.  
 Dr. Federico M. Diez-Rivas, Richmond.  
 Dr. Helen Dorsey, Hampton.  
 Dr. Hubert U. Dougan, Richmond.  
 Dr. Alonzo Watt Douglas, Newport News.  
 Dr. Clyde H. Dougherty, Franklin.  
 Dr. Arthur Baldwin Duel, Jr., Charlottesville.  
 Dr. Gershon Gerald Ediss, Richmond.  
 Dr. Rufus Purdum Ellett, Jr., Richmond.  
 Dr. Norris Scribner, Erb, Malvern, Ark.  
 Dr. Gustaf Walter Erickson, Jr., New York, N. Y.  
 Dr. Walter A. Eskridge, Oteen, N. C.  
 Dr. Stanton Lee Eversole, Jr., Charlottesville.  
 Dr. James Allen Farley, Huntington, W. Va.  
 Dr. Cecil Glen Finney, Richmond.  
 Dr. Franklin Fite, Norfolk.  
 Dr. Darius Flinchum, Willis.  
 Dr. Merritt Woodhull Foster, Jr., Madison, Wis.  
 Dr. Claude Albee Frazier, Winona, W. Va.  
 Dr. Herbert Pincus Friedman, Jr., Charlottesville.  
 Dr. Robert Joseph Frost, Washington, D. C.  
 Dr. Herbert Winston, Frostick, Charlotte, N. C.  
 Dr. Abraham Julian Gabriele, Dayton, Ohio.  
 Dr. Edgar Clyde Garber, Jr., Richmond.  
 Dr. Charles Mayo Garland, Jr., Chattanooga, Tenn.  
 Dr. Macbeth Roy Gasque, Jr., Charlottesville.  
 Dr. Frank Wilson Gearing, Jr., Richmond.  
 Dr. John Edward George, Roanoke.  
 Dr. Norman Goldfarb, Brooklyn, N. Y.  
 Dr. William M. Goldsmith, Hampton.  
 Dr. Zoltan Gondos, Norfolk.  
 Dr. Harold Goodman, Richmond.  
 Dr. John Milton Gouldin, Tappahannock.  
 Dr. Joseph Francis Graceffo, Washington, D. C.

- Dr. John Roy Gregory, Queens Village, N. Y.  
Dr. Robert Charles Haile, Washington, D. C.  
Dr. Edward N. Hamacher, Washington, D. C.  
Dr. Arthur Lawson Hardie, Jr., Jacksonville, Fla.  
Dr. Gordon Fletcher Harrell, Norfolk.  
Dr. James J. Harris, Yorktown.  
Dr. Barry Fugh Hawkins, Shreveport, La.  
Dr. Louis DeMaro Hayman, Jr., Whiteville, N. C.  
Dr. Glenn Gordon Hendrickson, Charlottesville.  
Dr. Lucius Davis Hill, III, Charlottesville.  
Dr. Robert Glenn Holt, Winston-Salem, N. C.  
Dr. Wesley Merle Hoppenrath, Yorktown.  
Dr. Melvin Lawrence Horne, Newport News.  
Dr. Charles Dotson Houck, Richmond.  
Dr. Thomas Carroll Iden, Berryville.  
Dr. Joseph Frasia Jones, Jr., Richmond.  
Dr. Robert Louis Keeley, Roanoke.  
Dr. Guy Otis Keller, Buena Vista.  
Dr. Douglas Oliver Kern, Wilmington, Del.  
Dr. Marguerite Elizabeth Kersey, Richmond.  
Dr. William Ward Kersey, Jr., Richmond.  
Dr. John Kilday, Alexandria.  
Dr. Charlton Roper King, Arlington.  
Dr. Robert Kinnaird, Jr., Richmond.  
Dr. Herman Melvin Kunkle, Knoxville, Tenn.  
Dr. James William Lambdin, Richmond.  
Dr. Ludwig George Lederer, Arlington.  
Dr. Ralph Michael LeComte, Washington, D. C.  
Dr. Parker Hall Lee, Jr., Charlottesville.  
Dr. Wallace Byron (Pete) Lilly, Beckley, W. Va.  
Dr. John David Lindner, Jacksonville, Fla.  
Dr. Samuel Woolston Lippincott, Jr., Baltimore, Md.  
Dr. James William Loynd, II, Brackenridge, Pa.  
Dr. Charles Hamilton Lupton, Jr., Norfolk.  
Dr. David Israel Macht, Emory.  
Dr. Fred Coleman Mackler, New York, N. Y.  
Dr. Hunter Reece Mann, Jr., Charlottesville.  
Dr. William Berry Marbury, Jr., Boston, Mass.  
Dr. William J. Martin, Arlington.  
Dr. Edward Nisbet Maxwell, Davidson, N. C.  
Dr. Wendell D. McCollum, Staten Island, N. Y.  
Dr. Olin Richard Melchionna, Roanoke.  
Dr. Karl Ferdinand Menk, Charlottesville.  
Dr. Helen Thedocia Mewborn, Portsmouth.  
Dr. Joseph Albert Miller, Yorktown.  
Dr. Ray Donald Minges, Richmond.  
Dr. Benjamin Franklin Montague, Charleston, W. Va.  
Dr. Cary Nelson Moon, Jr., Newport, R. I.  
Dr. Ray Atkinson Moore, Jr., Richmond.  
Dr. William Donald Moore, Cary, N. C.  
Dr. Silas Mercer Moorman, II, Lexington, Ky.  
Dr. Robert Holcombe Morrison, Petersburg.  
Dr. William Philip Morrisette, Richmond.  
Dr. Ernest Lewis Mrkvicka, Jr., Richmond.  
Dr. Marcus Nakdimen, Brooklyn, N. Y.  
Dr. Alva Denton Orr, Charlottesville.  
Dr. Roy Turnage Parker, Pinetops, N. C.  
Dr. Nelson Saunders Payne, Norfolk.  
Dr. Eugene Goodbred Peek, Jr., Richmond.  
Dr. Harry James Perlberg, Jr., Jersey City, N. J.  
Dr. Abraham Perlman, Brookline, N. Y.  
Dr. Randolph Preston Pillow, Seattle, Wash.  
Dr. James DeCamp Piver, Richmond.  
Dr. Harold Sidney Rafal, Richmond.  
Dr. Sidney Cohn Reichman, Charlottesville.  
Dr. Lonnie Titus Reid, Suffolk.  
Dr. Elmer Walter Rice, Binghamton, N. Y.  
Dr. Marion Lee Rice, Jr., Richmond.  
Dr. Peter Rosanelli, Richmond.  
Dr. Macey Herschel Rosenthal, Lynchburg.  
Dr. Carlos James Ross, Birmingham, Ala.  
Dr. William Anderson Sadler, Richmond.  
Dr. Robert Swynn, Schultz, Richmond.  
Dr. David Kalbach Shivelhood, Petersburg.  
Dr. Bernard Randolph Siegel, Newport News.  
Dr. Christian Fogle Siewers, Winston-Salem, N. C.  
Dr. Isadore Shapiro, Norfolk.  
Dr. Jack Stone Shaver, Woodstock.  
Dr. Robert Craig Shelburne, Christianburg.  
Dr. Morton Jack Silk, Bayonne, N. J.  
Dr. Hal Waugh Smith, Montgomery, W. Va.  
Dr. Oscar Orton Smith, Jr., Richmond.  
Dr. Wilbur Forrest Smith, Alexandria.  
Dr. James Given Snead, Covington.  
Dr. Harry Yandell Spence, Richmond.  
Dr. William Price Spencer, Charlottesville.  
Dr. William Calhoun Stirling, Washington, D. C.  
Dr. Royal Eppes Stuart, Galveston, Texas.  
Dr. Daniel D. Talley, III, Richmond.  
Dr. Gervas Storrs Taylor, Jr., Richmond.  
Dr. William Sanford Terry, Chatham.  
Dr. James Tidler, Richmond.  
Dr. Gordon Clark G. Thomas, Charlottesville.  
Dr. John Warrick Thomas, Richmond.  
Dr. Robert Henry Thrasher, Raleigh, N. C.  
Dr. Robert Palmer Trice, Richmond.  
Dr. Grattan Howard Tucker, Jr., Chase City.  
Dr. Richard Turin, Brooklyn, N. Y.  
Dr. Edward Alton Tyler, Brooklyn, N. Y.  
Dr. Graham Alexander Vance, Baltimore, Md.  
Dr. Jesse O. Van Meter, Jr., Jackson, Ky.  
Dr. Charles William Vivian, Phoenix, Ariz.  
Dr. John Barrett Walker, Jr., Richmond.  
Dr. Peter A. Wallenborn, Jr., Charlottesville.  
Dr. Marion Louise Whalin, Waynesboro.  
Dr. Carl W. White, Colony.  
Dr. Nancy Safford Whitticar, Fredericksburg.  
Dr. Walter Richmond Wilkinson, New Orleans, La.  
Dr. John J. Williams, Alexandria.  
Dr. Joseph Franklin Wilson, Richmond.  
Dr. Jean Fennell Wine, Harrisonburg.  
Dr. Henry Adolphus Wiseman, III, Danville.  
Dr. John Peter Wissinger, Cincinnati, Ohio.  
Dr. Payl Andrew Woods, Lynchburg.  
Dr. Charles Edward Woodson, Jr., Bethesda, Md.  
Dr. Edwin Snead Wysor, Clifton Forge.  
Dr. John Elmer Zearfoss, Jr., Charlottesville.  
Dr. Hyman Samuel Zfass, Richmond.



Dr. Joseph Percivall Whittle, Charlottesville.  
 Dr. Anibal Roberto Valley, Washington, D. C.

#### HOMEOPATHS

Dr. Earl Homer Kirk, Richlands.  
 Dr. Forney Drew Winner, Norton.

### The Tazewell County Medical Society

Met in North Tazewell on January 25 with the president, Dr. J. W. Witten, presiding. Others present were Drs. C. G. Bennett, Rufus Brittain, Ashby Coleman, M. B. Crockett, J. N. Higginbotham, W. C. Jackson, Mary Elizabeth Johnston, E. H. Kirk, A. D. Parson, H. A. Porter, J. A. Robinson, W. R. Strader, C. T. St.Clair, Sr., Hampton St.Clair and

-- Wade St.Clair.

Motion picture films demonstrating the technique of the modern treatment of second and third degree burns were shown, and Dr. Hampton St.Clair, member of the Bluefield Sanitarium staff, presented a paper on this same subject, discussing and describing in interesting detail the advantages of the various types of treatment and management of cases of severe burns.

Dr. C. G. Bennett of Bishop was installed to serve as president of the Society for the next twelve months.

J. A. ROBINSON, *Secretary*.

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## News

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### Medical College of Virginia News.

The annual Stuart McGuire lectures will be held on April 5 and 6 in the Simon Baruch Auditorium at 8:00 P. M. Dr. R. H. Smithwick of the Massachusetts General Hospital will be the McGuire lecturer. The program for the postgraduate clinics and the subject of Dr. Smithwick's lectures will be announced in March in an invitation to members of the medical profession in Virginia.

Dr. C. C. Coleman, professor of neurological surgery, has been appointed one of the three civilian consultants in the United States to the Surgeon General of the Army.

Dr. Selman A. Waksman on March 15 will give the annual Phi Beta Pi lecture at the college.

Dr. John C. Forbes, research professor of biochemistry, made an address on Proteins in Nutrition before the Virginia Section of the American Chemical Society on February 16.

Mr. Clifton B. Cosby has been appointed assistant professor of biophysics in the Baruch Center of Physical Medicine.

Major William E. Tidmore has been reassigned and Captain W. T. Hughes has been appointed Commandant of the A.S.T.P. unit at the college.

Dr. Lester J. Evans of the Commonwealth Fund was a recent guest at the college.

Dr. I. A. Bigger, professor of surgery, and Dr. William B. Porter, professor of medicine, will attend the meeting of the Cabell County Medical Society, Huntington, West Virginia, on March 8. They will discuss the physiologic aspects of arterio-venous fistula.

### Dr. Milton C. Richards,

Class of '37, Medical College of Virginia, who has been located for sometime at Goldsboro, N. C., announces the opening of an office in the Medical Arts Building, Richmond, for the practice of general surgery.

### Dr. John F. Cadden,

Connected for sometime with the American Viscose Corporation in Roanoke, has been transferred to the Wilmington, Delaware, offices, where he is assistant Medical Director for the Corporation.

### Army Medical Officers Rescued on Luzon.

Twenty-one officers of the Army Medical Department, including 13 doctors, 3 medical administrative officers, 4 dentists and a veterinary officer were named in the first list of prisoners freed from Camp Cabanatuan on Luzon, according to the Office of The Surgeon General. The list of those freed from Santo Tomas University, Manila, included 66 nurses, a physical therapist and a hospital dietitian.

The full list of freed prisoners has not yet been officially released.

#### **Married.**

Lt. (jg) Robert Gwyn Schultz, MC., USNR., and Miss Edna Lee Schaaf, both of Richmond, January 30. He is a graduate of the Medical College of Virginia, class of '44, and is at present stationed at the U. S. Naval Hospital in Key West, Florida.

Lt. William Winfree Farley, M.C., of the December 1943 class, Medical College of Virginia, and Miss Rachael Gilbert Smith of Kings Mountain, N. C., January 20. Lt. Farley is at present stationed at Camp Bowie, Texas.

#### **Dr. Francis W. Upshur**

Has resigned his position with the Eastern State Hospital at Williamsburg and returned to Richmond where he is working in Neuro-Psychiatry at the Induction Center.

#### **Dr. R. S. Griffith,**

Waynesboro, was one of fifteen railroad veterans, all of whom had worked for the Norfolk and Western Railroad for fifty years or more, who was presented with the Diamond Insignia of the N. & W. Veterans Association, in Roanoke, on January 20. Dr. Griffith has been in continuous service with the railroad as consulting surgeon since January 1, 1894.

#### **Dental Needs of Returned Soldiers.**

A redistribution station in this country, where soldiers just returned from overseas receive dental treatment, has reported to the Office of The Surgeon General that about one man in ten needs an extraction or other emergency dental treatment. This includes the construction of a denture if the man hasn't enough teeth to chew an average meal. According to this report, about 45 per cent of the men returning from overseas need one or more fillings while about 40 per cent do not require any dental treatment. Figures previously released by the Dental Division, Office of The Surgeon General, show that about one man in every four requires emergency dental treatment at the time of induction.

#### **Dr. T. H. Valentine,**

Lawrenceville, has been named a member of the board of directors of the local Chamber of Commerce.

#### **Wanted:**

A nurse anesthetist for small private hospital; salary open; pleasant working conditions. Address "Anesthetist", care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

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## Obituaries

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#### **Dr. Benjamin Roscoe Gary,**

Well known physician of Newport News, died February 11. He was a native of King William County and seventy-six years of age. Dr. Gary was a graduate in medicine from the University of Maryland, class of 1891, and had practiced in Newport News for more than fifty years. He had been a member of the Medical Society of Virginia since 1893. His wife, a son, and three daughters survive him.

#### **Dr. Michael W. Minor,**

Comorn, died January 31. He was seventy-seven years of age and received his medical degree from the University of Maryland in 1891. Dr. Minor had practiced in King George County for fifty-two years. He was a member of the Medical Society of Virginia. His wife, a son and two daughters survive him.

#### **Dr. Aubry Cheatham Belcher,**

Richmond, died at his home in this city on February 18, after a short illness. He was a native of Chesterfield County and fifty-five years of age. Following graduation from the Medical College of Virginia in 1916, Dr. Belcher took up special work at the Mayo Clinic, Rochester, Minn., and served on the staffs of several hospitals before locating for practice in Richmond. He was a member of his local and State medical societies and had taken an active interest in civic affairs in his section of the city. His wife, father and a son survive him.

#### **Dr. William H. Howell,**

Internationally known physiologist of Baltimore, died February 6, at the age of eighty. He was one of the early directors of the Johns Hopkins School of Hygiene and Public Health, having retired about ten years ago. Dr. Howell had also served on the faculties at the University of Michigan and at Harvard.

Used in the form of irrigations or wet packs, Tyrothricin, Parke-Davis, is effective against many gram-positive organisms.

Its antibacterial activity against streptococci, staphylococci, and pneumococci makes it of real therapeutic value when these organisms predominate in:

- Superficial indolent ulcers
- Mastoiditis
- Lesions of the skin and soft tissue
- Empyema
- Osteomyelitis
- Ear, nose, and throat infections.

TYROTHRICIN must not be injected. It is intended *solely for topical use* in the treatment of superficial infections, deeper infections made accessible by surgical procedures, and infections in body cavities in which there is no direct connection with the blood stream.

Supplied in 10 cc. vials, as a 2 per cent solution, to be diluted with sterile distilled water before use.



**PARKE, DAVIS & COMPANY, *Detroit 32, Mich.***



**The rooster's legs  
are straight.**

**The boy's are not.**



**The rooster got plenty of vitamin D.**

---

Fortunately, extreme cases of rickets such as the one above illustrated are comparatively rare nowadays, due to the widespread prophylactic use of vitamin D recommended by the medical profession.

One of the surest and easiest means of routinely administering vitamin D (and vitamin A) to children is MEAD'S OLEUM PERCOMORPHUM WITH OTHER FISH-LIVER OILS AND VIOSTEROL. Supplied in 10-cc. and 50-cc. bottles. Also supplied in bottles of 50 and 250 capsules. Council Accepted. All Mead Products are Council Accepted. Mead Johnson & Company, Evansville 21, Ind., U.S.A.

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# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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*April 1945*

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# Virginia Medical Monthly

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## *Guest Editorial*

### Cancer and the Physician

INFORMATION available to the public concerning cancer is now being widely disseminated. The American Cancer Society, Inc., and its affiliated state organizations, through various publicity channels, are stressing constantly the pre-cancerous and early-cancer symptoms of the discoverable types of the disease. These worthy endeavors are complemented by the educational efforts of the U. S. Public Health Service, state health departments, medical societies, insurance companies, and other organizations interested in public health and preventive and curative medicine. And magazines of national circulation are rendering excellent service through the publication of articles dealing with cancer.

Physicians have realized for some time that even intensified health educational activities are effective only up to a certain point. Short items on personal and public health problems, if popularized, will command a fair proportion of the interest of regular readers of newspapers; radio script prepared at the listener's level, if garnished with human interest, also holds a certain number of listeners; magazine articles attract many persons; health motion pictures, though still limited in circulation, when developed in the Hollywood manner, are attracting increasing audiences; and even pamphlets on health subjects are gaining in popularity, especially among the academic groups.

However, without in the least discounting such efforts, the most effective influence rests in the hands of the family doctor.

There is a large group with only superficial knowledge or information about cancer who develop an undue fear of the disease. Vaguely or often definitely aware that suspicious symptoms exist, they dread the likely diagnosis and deliberately avoid the doctor's office until the disease has progressed beyond help.

It is sufficiently tragic that approximately two-thirds of the cancer cases give slight, if any, warning until the condition is far advanced, frequently irremediably so. When to this present hopelessness is added the fatality of many victims whose lives could be saved were scientific steps promptly taken, the situation is pathetically ironical. It is at this point that the family physician can render an incalculable service if he be alert and zealous in his history taking and examinations.

It is quite true that the traditions of the profession, the interpretation of ethical practice, and an inherent reticence to avoid the appearance of "drumming up trade" represent retarding influences. Nevertheless, the practicing physician fails in his duty toward his patients when he limits his activities to the specific illness at hand. Curative medicine, naturally will represent the primary function of the medical practitioner.

In 1944, 2,491 deaths for cancer were registered in Virginia. In its early stage most cancer is curable. At least 60 per cent of all cancers should be cured. Probably

not more than 15 or 20 per cent is being cured in Virginia today. This, no doubt, means that full advantage is not being taken of present medical knowledge on the subject. It is well known that facilities for cancer diagnosis are not easily available to all the people in our State. Many of our physicians do not have the necessary hospitals available for the proper examination of their patients, as many of the examinations required in the early diagnosis of cancer cannot be successfully made in the physician's office.

To augment the diagnostic services now available at the eight cancer clinics in Virginia, consideration might well be given by the profession to the establishment of additional facilities such as mobile services with cancer specialists, laboratory technician, portable x-ray and other equipment necessary to make a complete diagnosis to supplement the diagnostic service already set up.

Through this procedure it would be possible to offer Virginia physicians an opportunity to learn more about cancer, to obtain consultation without sending their patients a long distance and in the long run benefit the individual citizen who will be more apt to seek medical advice if it is close at hand.

As previously intimated, it may be a bit embarrassing for the family doctor to suggest the need of the periodic physical examination to those of his patients (decidedly in the majority) who come to him for help for a specific condition, and want nothing else. Nevertheless, he should overcome his reserve in this vital discharge of a duty to those who have placed their trust in his professional judgment and skill.

Were practicing physicians more alive to their obligations in this respect, the one weak link in the preventive and curative medicine chain would be immeasurably strengthened. Conceivably, such an attitude universally adopted by all practicing physicians could reduce not only the deaths from early discoverable cancer, but could effect a reduction from other conditions as well.

I. C. RIGGIN, M.D.,  
*State Health Commissioner.*

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### Floral Eponym (26)

#### DIOSCOREA

#### PEDACIUS DIOSCORIDES

**A**LARGE genus of chiefly herbaceous twining vines of the family Dioscoreaceae. Most of them are tropical and a few are cultivated for food or ornament. *D. batatas*, sometimes called cinnamon vine, Chinese yam or potato, is grown in the tropics for its edible tubers. When we speak of yams we in Virginia have in mind the sweet potato (*Ipomoea batatas*) which is an entirely different family, really a morning glory.

Dioscorides, the originator of the materia medica, was a Greek army surgeon in the service of Nero. He used his opportunities of travel for the study of plants. He described about 600 plants and plant-principles. His descriptions were followed "word by word" for sixteen centuries and his book has been more attentively studied by learned men than any other botanical work, with the possible exception of Bauhin's *Pinax*. Dioscorides has a place in the history of anesthesia because he recommended Mandragora wine for the relief of pain in surgical operations and cauterizations.

## CONGENITAL PYLORIC STENOSIS\*

FRANK S. JOHNS, M.D.,

and

JAMES B. STONE, M.D.,

Johnston-Willis Hospital,

Richmond, Virginia.

Certain surgical problems, when solved, attract appreciative attention. Congenital pyloric stenosis is one of these. When it occurs in a first male child, it seems a calamity of alarming proportions to the infant's immediate family. But happily today this condition presents an old surgical problem which, by proper technique, has been lately and competently solved. This fact is fortunate, for hypertrophic pyloric stenosis is not an uncommon condition in the newborn. It is one of the most frequently encountered surgical conditions of early infancy. An indication of this frequency is seen in the series reported by Lanman and Mahoney,<sup>2</sup> of 425 cases treated surgically at the Children's Hospital, Boston, between 1915 and 1932; also in Williams' more recent report of 400 cases admitted to the Children's Hospital in Melbourne, Australia, between 1928 and 1941.

It is nearly three hundred years since the first recorded discussion of congenital pyloric stenosis. Hildanus, a German pediatrician, published this in 1646. In 1717 Blair reported a case; Charles Weber recognized one in 1758; and Armstrong<sup>1</sup> described a typical but fatal case in London in 1777. The first American physician to recognize this condition was Dr. Hezekiah Beardsley who, in 1788, reported his case before the Medical Society of New Haven. Both he and Armstrong claimed successful treatment. But we note with interest the long interval that elapsed between the recognition of pyloric stenosis and the adoption of its properly standardized treatment.

Prior to 1908 the surgical treatment for this condition carried a high mortality. Fifty to seventy-five per cent mortality<sup>1,5</sup> was the gloomy prognosis, but the development of the Fredet-Ramstedt operation proved a turning-point in this chapter of surgical history. This procedure in the hands of a skilful surgeon, plus today's prompt diagnosis on the part of trained pediatricians, with vigilant post-operative nursing and nutritional care have lowered

the mortality of congenital pyloric stenosis to almost nil.

Approximately 75 to 80 per cent of these cases occur in boys. In some series, this ratio is as high as ten-to-one. More than one case has been reported in the same family, and it has also occurred in twins, which facts support the view that there may be a familial tendency. However, although numerous theories have been advanced as to the etiology of the condition, none has yet proved conclusive. Its incidence has no relation to the type of food taken. A large proportion of cases of pyloric stenosis are breast-fed.

Pathologically the condition is essentially one of hyperplasia and hypertrophy of the pyloric musculature, especially of the circular fibres. Authorities are inclined to agree on the presence of a congenital hypertrophy with a superimposed spasm contributing to the obstruction.<sup>4</sup>

Symptoms may be present from birth; but the onset is usually between the second and tenth week, more often before the end of the second month. The spitting-up or vomiting of food during the early weeks of life is not uncommon; its occasional occurrence is no cause for alarm. But persistent vomiting by a young infant in the absence of infection, fever, diarrhea, or obvious gross feeding errors immediately suggests pyloric stenosis. Such vomiting should at once arouse suspicion that more than a simple functional disorder now exists. If it was at first occasional, but has become progressively more frequent and forceful, until it is now definitely projectile, we have the most characteristic symptom of pyloric stenosis. Other important indications to the diagnosis are: visible gastric peristalsis, seen more readily during or just after feeding; constipation of a progressive character, owing to very little food passing the pyloric obstruction; failure to gain or actual loss of weight; finally, the presence of a palpable pyloric tumor.

Considerable dexterity and experience are needed to palpate even an enlarged pylorus with certainty.

\*Read before the annual meeting of the Medical Society of Virginia at Richmond, October 23-25, 1944.



If the tumor is palpable, it is a most important finding, and is positive evidence of the stenosis; but failure to palpate the tumor is not conclusive proof to the contrary, and such failure should not obscure the diagnosis.

In making a diagnosis of pyloric stenosis the condition most often confusing is pylorospasm. The symptoms are quite similar and the clinical difference is largely one of difference in severity of the presenting symptoms. The pylorospasm vomiting is less constant, and less uniformly projectile in character; constipation is not as marked; and visible gastric peristalsis is less obvious. Because the obstruction is less, there is more likely to be some regular gain in weight.

Other conditions to be differentiated from pyloric stenosis are:

(1) Atresia of the pylorus, which gives signs similar to pyloric stenosis, but present from birth. It calls for prompt surgical intervention.

(2) Duodenal obstruction, which may be due to stenosis, or to constricting congenital bands resulting from abnormal developmental processes. Pronounced visible gastric peristalsis is always an indication of pyloric or duodenal obstruction.

(3) Duodenal ulcer, which produces symptoms similar to pylorospasm noted above, except that if the ulcer is below the ampulla of Vater the vomitus is apt to contain bile.

(4) Atresia of the intestines below the duodenum. This results in vomiting, beginning soon after birth, though not of a projectile character, and it does not produce visible gastric peristalsis. In this condition also no fecal matter is passed from the bowel.

Once the existence of pyloric stenosis is suspected the question is whether treatment should be medical or surgical. Mild cases in which there is a large element of spasm *may* respond to medical treatment. This will consist primarily of thick cereal feedings, with the administration of atropine or similar antispasmodic drugs, phenobarbital, calcium, and vitamin B therapy. But if there is much organic obstruction medical treatment is of no avail; it will only necessitate a prolonged course of treatment with much danger of death from acute inanition or intercurrent infection.

The infant's weight curve is the best index to the effectiveness of medical treatment. If the baby is in good condition when first seen and is gaining weight in spite of the vomiting, continuation of this

treatment may be justifiable. If there is no improvement after one to two weeks, or if the baby's condition is not good when first seen it should be treated surgically.

Medical treatment is justified only so long as there is definite improvement, as indicated by consistent gain in weight. In the majority of cases, after the diagnosis is established, surgery is the treatment of choice.

The operation for congenital pyloric stenosis is definitely standardized. Certain factors governing our surgical success should be stressed. Pre-operative care is of paramount importance. Too often these babies when first seen are already completely dehydrated with extreme loss of weight, and in no suitable state for operation. Essential pre-operative care then consists largely in restoring fluids and electrolytes lost by persistent vomiting. If the nutritional condition has become very bad, transfusions are given. Dehydration is combated by administration of saline or 5 per cent dextrose in saline, Ringer's solution, or Hartman's solution by hypodermoclysis or intravenously, depending on the urgency of the case. The operation for pyloric stenosis is never an emergency procedure; 24 to 48 hours spent in combating the dehydration before operation has been found to go far toward reducing its operative risk. The undernourished and dehydrated condition of these patients has been more often responsible for a fatal outcome than any strictly surgical cause.

In our series of cases I have used an upper rectus incision, quite a small one, just over the pylorus; thus the pylorus can be readily located and at the same time pulled into the incision with the index finger and thumb so that there will be no chances for the small intestine to get into the incision. The incision into the pylorus is begun on the gastric side and carried over to the duodenal side; this incision should be made through the least vascular area. It has been my practice to separate the musculature with the very small hemostat, again beginning on the gastric side and continuing on to the duodenal side and using meticulous care, so that there will be no tearing into the mucus membrane. This accident happened in one of our cases. The mucus membrane was closed promptly, and no post-operative effects followed. But it is definitely an accident, and if the proper precaution is used it should not happen. No attempt was made to cover this

raw surface in any of my cases, and I have had no post-operative complications to indicate any ill results following this operative procedure.

The abdominal wall is closed with through-and-through silk worm sutures. Peritoneum and fascia are closed with continuous Double-O chromic catgut. I have had no evisceration, and our records do not show any post-operative hernias. I think it is of great importance to put in through-and-through silk worm sutures, especially if the baby is below par and not adequately nourished prior to operation.

In performing this operation consideration must be given to the difference between the infant and the adult. One important difference is the ease with which the infant becomes chilled by loss of body heat, with resulting shock. The maintenance of body heat during the operation by avoiding unnecessary exposure of the body surface, and by careful use of warm blankets and hot water bottles while the patient is on the operating table is extremely important. Skilful surgical technique, avoidance of undue trauma, and a judiciously administered anesthetic are essential in preventing shock and conserving the infant's vitality during the operation.

The anesthetic plays an all-important role in successful operations on these young babies. We have adopted the following procedure: local infiltration with  $\frac{1}{2}$  of 1 per cent novocaine supplemented by a few drops of chloroform. As to chloroform, I think a warning is imperative here to every surgeon and anesthetist who may expect to adopt this type of anesthesia. I want to emphasize the fact that Dr. Goldman, an experienced anesthetist and a specialist, gives the chloroform for us. He had a liberal experience in using chloroform for tonsillectomies in former years, and he has the proper respect for this anesthetic and gives it efficiently, with the proper precautions. This combined anesthesia has disturbed the babies very little, so far as we have been able to tell, and we have been able to have them return to their feeding promptly. It is true that this operation can be done under local anesthesia, but in our experience there is always some straining when traction is put on the pylorus; this certainly influences one's technique in completing the operation and might be a factor in the result. Therefore, we have adopted the method of giving a few drops of chloroform for relaxation at that stage of the operation.

Post-operative conservation of body heat, com-

bating dehydration, restoration of lost electrolytes and good nursing care to prevent infection are other prime requisites in the successful surgical treatment of pyloric stenosis.

Illustrating the need of good post-operative nursing care is Williams' report of three deaths out of 106 cases treated surgically, of which one was due to broncho-pneumonia, and one to accidental asphyxia from inhalation of vomitus.

Fluids in the form of normal saline, Ringer's or Hartman's solution must be supplied parenterally for several days after operation in order to combat dehydration. A total of at least three ounces of fluid per pound of body weight should be provided, a large part of which will have to be given by hypodermoclysis or by vein. If the infant's nutritional condition is bad, blood plasma or transfusion of whole blood is indicated. The caloric intake during the early days is less important than fluids and electrolytes. For the first three or four days no attempt is made to meet the infant's caloric needs. Faber and Davis,<sup>6</sup> and Ochsner<sup>7</sup> maintain that post-operative depression of gastric peristalsis lasts for twenty-four hours or longer and advise withholding food by mouth for the first twenty-four hours. Our experience has not shown this to be necessary and our practice has been to start water by mouth within two to three hours after recovery from the anesthetic. One or two teaspoons of 5 per cent lactose solution is given every two hours, and after four to six hours breast milk or artificial feeding diluted to half its usual strength for the baby's age is given; at first one to two teaspoons every two hours is sufficient, this and the lactose solution being given alternately. The quantity of lactose solution and formula or breast milk is gradually increased during the succeeding twenty-four hours, depending on how it is taken and retained. It is usually well retained and after twenty-four to forty-eight hours, small feedings are given every three hours with lactose solution half way between feedings. After several days, food normal for the baby's age and weight can usually be taken. It is important that only small quantities be given at first and that increases be made slowly so as not to exceed the infant's tolerance.

The twenty-six cases which we report today are private cases from the Johnston-Willis Hospital. They have been treated according to the principles discussed above, and, although the number is too



small to draw any statistical conclusions, we feel that our results have been highly satisfactory. In this group of twenty-six cases there have been no fatalities. These cases were completely worked up; and while we have had a number of pyloric stenosis cases at other institutions, they are not recorded in this report. I might say, however, there are no deaths in our series either at the Johnston-Willis or at other hospitals.

In our series the onset of symptoms was at one to four weeks of age and operation was performed within a few days to a week after the diagnosis was established. For the most part convalescence was uneventful. There was very little post-operative vomiting, and usually there was rapid gain in weight after full feedings were resumed. One case had a slight wound infection; and one developed bronchopneumonia which responded promptly to sulfathiazole therapy. In another case in which there was slow healing with an unhealthy appearance of the abdominal wound, healing took place promptly after blood plasma was given.

From a surgical standpoint the most impressive fact in our series was the excellent condition in which a number of these babies were brought for operation. This was due to sound pre-operative treatment, and I consider it the most important factor in our resulting zero surgical mortality with 100 per cent of our cases. If pyloric stenosis patients are allowed to go undiagnosed and to get in poor physical condition, it prolongs their hospital stay tremendously and at the same time increases their surgical risk. Early recognition and accurate diagnosis are essentially important, if we are to make the progress that should be made with our present means of repairing this serious congenital defect successfully.

#### CONCLUSIONS

1. Congenital pyloric stenosis is a condition in which the treatment of choice is surgical. If good surgical facilities are available the chances for recovery are much better than with any plan of medical therapy.

2. For best results operation should be performed as soon as the diagnosis is established and adequate pre-operative treatment given.

3. Before operation dehydration should be overcome and electrolytes restored by parenteral administration of fluids. If the nutritional state is bad, transfusion should be given before and after operation.

4. The Fredet-Ramstedt operation is the one of choice. During operation avoidance of unnecessary trauma, maintenance of body heat, and a carefully administered anesthetic are important. Chloroform is valuable when given cautiously by an expert.

5. Post-operatively the baby should have good nursing care and body fluids should be maintained by parenteral administration of salt solution, supplemented by glucose, or transfusion if the condition is not good.

6. No attempt should be made to meet caloric needs by oral intake for the first four to five days following operation. Lactose solution (5%) and diluted feedings are given alternately at one to two hour intervals, beginning with very small amounts several hours after reaction from the anesthetic, and increasing the quantities very gradually.

7. Ether, or, if an expert anesthetist is available, chloroform, by the open drop method, combined with novocaine locally, are the anesthetics of choice.

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#### DISCUSSION

DR. W. LOWNDES PEPLE, Richmond: Dr. Johns has so thoroughly covered the diagnosis and treatment of this condition that there will be little that I can add except to emphasize some of the points that he has brought out and to add a little to the question of technique.

This is one of the most dramatic things that we surgeons encounter, as Dr. Johns has remarked. We are getting these cases today in a very different condition from those we saw in the early days. My experience dates back to the beginning of the operation in this part of the country. I have some over thirty years old. In those days we had to do a gastro-enterostomy, for the Ramstedt operation had not then been devised. To do a gastro-enterostomy on a tiny, shrunken, little worm such



as these little patients appear to be when they come to the table, is extremely difficult. However, I did two that survived, and made good recoveries.

I have had forty or fifty cases. I have not been as lucky as Dr. Johns has been, for I lost one in our own hospital and two in other hospitals.

As to the question of diagnosis, if you get a case of congenital pyloric stenosis in the first week, it is usually something else. Change your mind; hold off your diagnosis if it comes very early. This condition comes anywhere from the second to the fourth or even in the sixth week; seldom does it come in the first.

There was one very warm subject of controversy every time this subject was brought up in medical gatherings a few years ago, and that was as to whether these cases should be treated medically or surgically, some claiming that all cases were surgical and others claiming that all were medical.

If you exclude those with pylorospasm, it is true that we have some borderline cases of true pyloric stenosis in which the increase of tissue is not great enough to cause complete obstruction; and these babies under careful, skillful treatment will get well. There is no controversy at all. If the baby's stomach is stopped up so that nothing can get out of it, and you leave that baby alone it will die.

Interestingly enough, the vital statistics will show a decrease in deaths from marasmus, or acute inanition, as knowledge of pyloric stenosis has progressed. These children used to die from marasmus, but whether incorrectly diagnosed or not, they died.

There is a difference between pyloric stenosis and mechanical obstruction. A child with mechanical obstruction does not want anything more after the stomach is emptied. The child with pyloric stenosis is eager for something immediately and will take water or food over and over again.

There is that curious ball wave peristalsis. I understand that Dr. Smith of St. Elizabeth's clinic has a short moving picture and that part of it will show this ball wave peristalsis. After this discussion is completed I am sure he will be glad, as a part of his discussion, to show this picture.

(Dr. Peple here showed a couple of slides which he described.)

(Slide 1.) This is to show the radiogram of one of these little cases. You see how completely the stomach is blocked up, with only a little barium going through. You may ask, if the cases are doubtful, why not give it to all of them as part of the diagnosis. The reason is this. If you give it you will have a whole lot left in the stomach and bowels when you are ready to operate, and it is very messy. It is difficult to wash out of the stomach, and it is a very important part of this operation to have the stomach empty at operation, for two reasons. One is that it makes it difficult to handle the stomach if it is not empty, and the other is that when you open the pylorus and let all this material down into the intestines, you have something that will either upset the

child's digestive tract or at least give it a fever.

(Slide 2.) Here is the bulb or tumor, showing how the walls have increased from the normal. We do not feel this in all the cases; only in the late cases can it be felt through the abdomen.

As Dr. Johns said, the incision is made in the long axis of the stomach right across the circular muscle, cutting carefully up to where the pyloric ring meets the other part of the intestine. There is some fine technique needed here, for it is easy to cut into the duodenum. On top of the tumor are some very small arteries, which are visible. It is very hard to tie them by clamping with hemostats. I usually take a tiny needle such as eye doctors use for the sclera, with the finest silk thread, and ligate them before dividing them.

The question is often asked, why do you not have an obstruction here after healing takes place; why do you not have a scar causing obstruction later on? I have never had occasion to go back in any of these little people to see what the result is like, to see what the scar is like. But neither have I ever seen an obstruction follow this operation.

When you go to operate on your first case you feel as if you are Gulliver in the Land of Lilliput. The baby is in the middle of the table and has to be held. You have to have little instruments. To overcome this difficulty I devised a table some years ago. It is just a little wooden table fastened by straps to the big table. It lifts the baby up to you. There is a drawer in it, and that holds two hot water bottles to keep him warm during the operation. That makes it impossible to burn the patient. We have little sheets, little towels, little blankets. The nurses like that because it takes them back to their dollhood days. The little table is lashed to the big table, so it follows the movement of the big table, and will not turn over.

Chloroform would be the anesthetic of choice if you have a good anesthetist, old enough to have lived in chloroform days. Next to that I think is drop ether. In the little babies who are almost dead and very thin and very weak you can get along very satisfactorily with local anesthesia. They do not have strength enough to strain. We sometimes use the same anesthetic that a Jewish Rabbi uses in circumcision; a sugar rag dipped in wine. It is a good one.

I was very proud of the little table, because it was very helpful, but a friend of mine took a look at it and said it looked like a rabbit trap. That upset me, but it does look like a rabbit trap, and that makes it worse.

Dr. Johns made the statement that these little people have to have meticulous care, and that is true. A good baby doctor knows how to feed them; the surgeon usually does not. It is wonderful how quickly they respond to proper nourishment, and turn pink and plump up.

Speaking of the little details, I shall never forget one gastro-enterostomy. I knew the operation had been done well, but there was something wrong. It was not working. About the third day I took all the dressings off. When we removed the last piece of adhesive I heard a

very audible gurgle, and the baby was all right from that moment.

This is a dramatic thing as we have said before. There lies a little, tiny baby, with big eyes and hungry mouth, begging constantly with his eyes for something more to eat and then immediately vomiting it up, losing weight, losing strength. To see that child restored to normal is really worth everything, and to see the mother as the little baby grows step by step is almost as good for one's soul.

VICE-PRESIDENT BOYD: We would like to hear from Dr. James B. Stone, the co-author of the paper.

DR. JAMES B. STONE, Richmond: I have little to add to what Dr. Johns has said but should like to stress a few points. One is the importance of an early diagnosis and prompt institution of proper therapy if the cases are to be saved. The diagnosis is not difficult and, after it is once made, the treatment of choice is surgical—unless the symptoms are mild, the baby is not vomiting regularly, and is gaining in weight. The surgical mortality has declined very much in recent years, due not so much to change in technique as to better pre-operative and post-operative care. The mortality under the old methods of medical care was 50 per cent or more. In recent years, with improved pre-operative and post-operative care, the mortality in surgically treated cases has been reduced to less than 3 per cent.

The pre-operative care is largely a matter of combating dehydration and restoring electrolytes which have been lost. During the operation the conservation of body heat and the avoidance of undue trauma should be stressed, as well as good surgical technique. In the post-operative period the maintenance of body fluid and good nursing care are important. It is a mistake to try to meet these babies' caloric needs by oral feeding during the first few days. Usually it is four or five days before they can take much by mouth. Food is not so important at this period but fluids are, and need to be given parenterally for several days after operation. Good nursing care is very important post-operatively if these babies are to have the best chance, because, otherwise, they may die of some intercurrent infection, or accidental asphyxia from aspiration of regurgitated food.

DR. E. A. HARPER, Lynchburg: I should like to say just a word or two about this problem from the medical or pediatric point of view. I should like to say first how much I enjoyed Dr. Johns' presentation, which has covered the subject most thoroughly.

As Dr. Johns says, one of the most important things is pre-operative and post-operative care of the patient. I should like to emphasize again that these cases are never an emergency. It is better to take your time and get them in good condition before operating than to rush them into the operating room and have them die from shock.

One of the best descriptions I have heard of the peristaltic wave is that given by a patient, who said it is like a snake thrashing around in the baby's abdomen. That is one thing that the nurses will notice.

One thing I have found helpful in diagnosis is to take off all the baby's clothes, put him in a tub of warm water, give him as much orange juice as he will take, and begin to palpate the abdomen under the warm water. He will promptly vomit and then, with the abdominal wall soft it is usually easy to feel the olive-like tumor.

When Dr. Johns said the muscle fibers end abruptly at the duodenum, that should be emphasized. They do end abruptly. The surgeon who pokes around too much with his hemostat in order to get every fiber is likely to find his hemostat in the duodenum. I think the answer to it is to do the job quickly, thoroughly, and with no puttering.

I was very much interested to see Dr. Peple's table and I hope I can get a carpenter to make one for us when I get home.

Let me say again that I enjoyed the paper very much.

DR. W. C. KAPPE, Huntington, West Virginia: There are a few points I would like to stress about this very appropriate paper of Drs. Johns and Stone. The first is in regard to the cooperation between surgeon and pediatrician, especially as regards the feeding of these infants post-operatively. In our experience we have had cases where the infants, because of improper feeding, have continued to vomit after operation, and, in one particular instance that I recall, we were about to re-operate a child because we thought that possible we had not severed all of the fibers of the fibrous ring at the pylorus, but fortunately a pediatrician who was called in was able to rectify the condition by proper feeding.

Another point as regards technique that we have found useful is that we make a short incision and make it high so that the first thing encountered when the abdomen is opened is the border of the liver. The stomach is then drawn out through the incision and the pyloric tumor is ready for operation. A small incision prevents extrusion of the small intestines in case the baby strains too much during operation. We make a very small incision into the pyloric tumor with a very small knife and the fibers are separated with a very small forcep. When these fibers are opened the feel is that similar to when one cuts into an onion.

In most of our cases we have found that local infiltration of the skin and the use of a sugar tit in which a few drops of paregoric have been put will suffice so far as anesthesia is concerned.

DR. HUGH H. TROUT, Roanoke: There are three things I want to speak about on this very interesting subject. The first is diagnosis. I do not know who first put us on to it, but one of the things we have picked up through the years is that if you put the baby in a tub of warm water and then turn him over on his abdomen and with your hand on his abdominal wall, very often you can feel that little olive mass when you cannot find it in any other way. Simply pat your hand up and down and sometimes you can feel the mass bobbing against your fingers.

Second: Sometimes an x-ray picture will give corroboration.



rative evidence, and it takes only a minute or two to do it. As Dr. Johns says, we do not want to put any mess of barium in the stomach.

Dr. Peple sent me one of these tables about twenty-five years ago, and there has never been anything that has given me more comfort in my surgical career than this little table. At the last meeting of the American Surgical Association, I was describing it to three men who do as much work on children as any three anywhere in this country, and they had never heard of that table. I sent each one of them one of those tables. Dr. Ladd, of Boston, who confines his surgical work to children, wrote me and said this table had been of much comfort to him. Dr. Staige Davis, of Baltimore, and Dr. Vilray Blair, of St. Louis, have also found the Peple table of comfort to them and to their little patients.

There is one case I should like to report. We had a case who had had a gastro-enterostomy done when he was an infant. He was operated on before the advent of the Ramstedt operation. We operated on him about 25 years after his gastro-enterostomy, and the operation showed a tremendous mass. At first we thought this was a carcinoma extending down into the duodenum and blocking the common duct. He was jaundiced and had a marginal ulcer. We had to take down the gastro-enterostomy and do a resection and anastomose the stomach to the jejunum—Polya type of operation. Interestingly enough, there was no sign of malignancy. I have a feeling that this fibrous tissue which was formed at the pylorus is a defensive process.

When a Ramstedt type of operation is done, the food goes on through the pylorus without meeting any resistance, and, therefore, the production of fibrous tissue ceases and the fibrous mass disappears as the child becomes older. In the patient who had had a gastro-enterostomy in infancy, of course, the pyloric mass was allowed to remain. It is probable that food continued to try to go through the pylorus, which the fibrous tissue prevented. The patient continued to produce more and more fibrous tissue at the pylorus because of the constant and repeated attempts of food to force itself through the pylorus. At least this is a plausible explanation of the finding of

such a large amount of tissue at the pylorus in the case we are reporting.

DR. JOHNS, closing the discussion: I wish to thank the gentlemen for discussing this paper and for their liberal comments, which I appreciate very much.

In closing the discussion, I should like to re-emphasize one point which applies particularly to my own series. This is the preparation of the patient for operation. This work has been done with extreme care and efficiency by Dr. Stone and Dr. Jones, two active pediatricians on our staff; and I am convinced that this pre-operative preparation, plus the post-operative care given our patients, has had much to do with the successful handling of this series of pyloric stenosis cases.

I will also repeat emphatically the importance of the nursing care for each case. Every child who has had an operation for pyloric stenosis should have a special nurse, for at least 48 hours, or until he is past the danger stage.

Dr. Kappes' question about the incision was very interesting. I think the size of the incision is certainly important. But the thing that is more important, as regards the incision, is the sort of anesthesia you have. Complete relaxation is essential when you make your incision into the pyloric side of the stomach. As you continue to separate the fibers toward the duodenum where these fibers stop abruptly, the child must remain quiet and relaxed. The cases we had under local anesthesia struggled a little at this stage, for which reason we prefer the use of chloroform in the hands of our skilled anesthetist. I think it was at this stage of the operation that Dr. Kappes had his punctures. We have had no fistulas at all, in our series. I should, in fact, hate to have one in an infant so small. A sugar-bag may be a useful adjunct until the operator gets down to the pylorus. That is when these patients struggle, unless there is complete relaxation, and that is the point in our procedure when we do not want them to struggle.

We have x-rayed these patients in doubtful cases; but barium, of course, is like cement in the intestinal tract. We have explored no cases that did not have pyloric stenosis.

### Russian War Relief.

The American people in 1944 contributed almost \$23,000,000 in cash and goods to Russian War Relief, making a total of \$46,246,240 received by the agency since its inception a little over three years ago, as reported by Edward C. Carter, president. Clothing, medical and surgical supplies, household kits, seeds and miscellaneous relief items valued at \$14,675,839.81 were contributed to the agency direct

and \$8,019,272.90 in cash was contributed through the National War Fund. Supplies valued at \$66,294.49 were turned over to Russian War Relief during the year for processing, packing and shipping to Czechoslovakia by American Relief for Czechoslovakia, Inc.; supplies valued at \$31,919.25 destined for Poland were similarly handled during the year for Polish-American groups.



## DERMATITIS IN THE AMERICAN MUNITIONS INDUSTRY\*

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The importance of occupational skin diseases in slowing down production is not generally appreciated. Actual time lost caused by dermatitis from explosives amounts to thousands of man hours.

Among workers in certain types of munitions manufacturing, dermatitis is the most frequent occupational disease. From 2 to 50 per cent of all new workers handling explosives such as tetryl develop dermatitis after five or more days of work, depending upon the degree of exposure<sup>1</sup>.

Explosives are grouped into propellants and bursting charges. The propellants release their energy relatively slowly, thereby allowing their kinetic energy to propel the bullet, projectile, or rocket without destroying the releasing mechanism, whereas bursting charges release their energy rapidly and are thus effective in military high explosives (Figure 1).

DIAGRAM - ARTILLERY SHELL

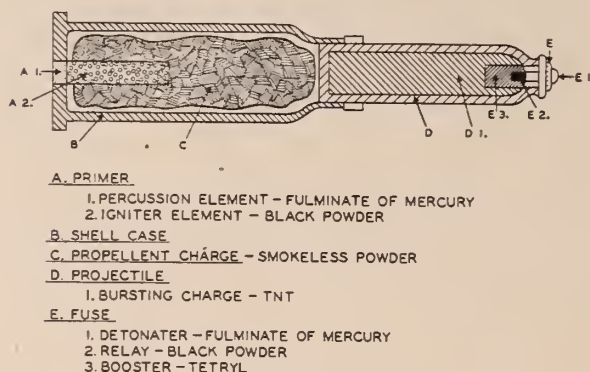


Figure 1.—Diagram of an artillery shell.

## PROPELLANT CHARGES

Smokeless powder is one of the principal propellant charges used today. It is made by nitrating cotton or wood pulp and processing it into a colloidal mass into which are incorporated various chemicals which regulate the speed of burning and stability. The colloid is processed into "grains" which vary in size according to the weapon in which the propellant is to be used.

Double base powder is another propellant and is commonly used for mortar and rocket shells. It consists of nitroglycerin in a nitro-cellulose base to which certain chemicals have been added to regulate the speed of burning.

Dermatitis rarely occurs among workers making smokeless and double base powder. Occasionally, contact with inhibitors and plasticizers, such as dinitrotoluene, hexamine, and dibutylphthalate, may produce an allergic contact dermatitis of an erythematous vesicular type. Solvents, such as ether and alcohol, also occasionally lead to dermatitis, and inhalation of their fumes may result in an eruption resembling acne rosacea. Nitroglycerin may be absorbed through the intact skin and cause systemic symptoms.

Black powder was formerly the only propellant in use. It was supplanted by smokeless powder in 1870, but is still used in primers, fuses, igniters, military pyrotechnics, and incendiary devices. This powder is made from charcoal, sulphur, and various nitrate salts. Black powder has rarely if ever been reported as the cause of dermatitis among the workers handling the finished product.

## BURSTING CHARGES

High explosives are grouped into (1) sensitive explosives which are easily detonated and used in boosters, fuses, primers, and detonators, and (2) stable explosives which are not easily detonated and are used for the principal explosive charges. They are described as stable because a secondary explosion from the booster system is needed to cause detonation.<sup>2</sup>

## SENSITIVE EXPLOSIVES

This group of explosives includes tetryl, fulminate of mercury, lead azide, and lead styphnate. They are easily caused to explode by means of a blow, friction, or shock of contact.

Tetryl (trinitrophenylmethylnitramine) is a light yellow crystalline powder and is the most frequent cause of allergic contact dermatitis in the munitions industry. About 30 per cent of all workers handling this compound develop dermatitis after five to ten days of exposure. After several days, the acute

\*Read before the annual meeting of the Medical Society of Virginia at Richmond, October 23-25, 1944.

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dermatitis subsides, healing occurs, and, in the majority of cases, the worker can continue without further trouble. Schwartz<sup>3</sup> considers this to be a "hardening" or a desensitization phenomenon. This is especially true of those workers who can continue their exposure to tetryl while receiving treatment. There are a few people who never develop a tolerance and in whom even a very slight exposure to tetryl will result in an acute flare-up of their dermatitis. The most frequent sites of tetryl dermatitis are about the mouth, eyes, cheeks, and neck. The acute phases of the eruption are characterized by erythema with vesicles and oozing; the edema may be of such severity as to close the eyes (Figure 2).



Figure 2.—Dermatitis due to tetryl.

Infrequently the genitalia and other parts of the body touched by the worker's soiled hands may be affected. A nosebleed without ulceration of the nasal mucosa often occurs. Toxic systemic manifestations are mild and infrequent.

Tetryl is also a powerful yellow dye and almost all workers coming in contact with it have yellow staining of the hands, face, neck, and hair, with or without evidence of dermatitis. Workers thus affected are often called "canaries". This stain, which most workers consider a sign of distinction, is difficult to remove by means of washing with soap and water. However, an aqueous solution of 10 per cent sodium sulfite, or a soap containing potassium sulfite, will materially aid in the removal of the tetryl. This method of washing also serves as an indicator. As long as free tetryl is present, there is formed, in

the presence of the sulfite, a dark red solution which is readily discernible. The workers are instructed to continue washing until no more color is seen upon the application of unused indicator solution.

Fulminate of mercury is a dark yellow crystalline solid used in primers and detonators. It is the first explosive (primer) set off by contact with the firing pin, thereby firing the propellant charge. Also, it is the first to be set off when the shell or projectile (detonator) strikes the target. This in turn sets off the train of explosives in the fuse and booster system which results in firing the principal bursting charge.

The workers engaged in manufacturing this explosive rarely develop dermatitis as it is handled under water. However, those workers engaged in filling primers and detonators are frequently affected with allergic contact dermatitis, as they are handling the fulminate in a dry, dusty form. Also, there is more intimate contact on the assembly job. Dermatitis is usually noticed five or more days after exposure, and occurs most often on the face and hands. The body may also be affected as the dust sifts through the clothes. The fulminate dust may cause nasal irritation and conjunctivitis. Abrasions and cuts contaminated with it often become ulcerated.

Lead azide is a highly sensitive explosive and is used in detonators and primers. It rarely causes dermatitis.

Lead styphnate is an orange-brown powder used in primer mixtures and produces dermatitis and staining of the hair and skin a yellow color similar to that described under tetryl.

Nitroglycerin is a liquid of extremely high explosive power, but is so sensitive that it is not used as such in military explosives. It is used in combination with other materials in preparing double base powder and dynamite.

The literature contains reports of dermatitis of the hands and ulceration occurring under the fingernails among workers exposed to nitroglycerin, the last report being dated 1923. The Dermatoses Section, in its investigations of plants making and handling nitroglycerin, has not seen dermatitis or ulcerative lesions caused by this compound.

Considerable quantities of nitroglycerin may be absorbed through the intact skin and by the inhalation of fumes. This may give rise to headaches, nausea, vomiting, and other systemic effects<sup>4</sup>.



### STABLE EXPLOSIVES

This group of explosives includes TNT, DNT, amatol, explosive D, hexite, PETN, and RDX.

TNT (trinitrotoluene) is a light brown crystalline solid and, after tetryl, is the most frequent cause of dermatitis in the munitions industry. Workers engaged in TNT manufacture have a considerable exposure to it during the final stages of manufacture and in the packing and shipping departments. Exposure to TNT is still more frequent in bomb, shell, and torpedo loading plants.

Dermatitis most frequently occurs on the hands, wrists, and forearms, and also at points of friction, such as the collar line, belt line, and ankles. Rarely, a generalized dermatitis may occur. This type usually requires hospitalization. Characteristic of TNT dermatitis are the vesicular lesions of the palms, which are deep-seated and about the size of a pea. Considerable edema is present in the adjacent tissues (Figure 3). The inflammatory reaction



Figure 3.—Dermatitis due to TNT.

usually subsides in 7 to 14 days with marked desquamation, usually in large plaques. The other cutaneous lesions are not characteristic and consist of papules and vesicles on areas of erythema, which gradually subside and are followed by flaky desquamation.

Staining of the skin and hair occurs as in tetryl, except that the color has a more definite reddish hue. Sodium sulfite solution removes TNT with a resulting purple-red color<sup>5</sup>.

TNT may enter the worker's body by way of the respiratory and gastro-intestinal systems, and also by absorption through the intact skin. Workers having toxic systemic manifestations may show cyanosis of the face and lips<sup>6</sup>. Because of the ever-

present danger of systemic poisoning, TNT workers in this country have periodic physical examinations, urine analysis, and blood counts every 30 days. These are standard practices to give maximum protection to the workers.

DNT (dinitrotoluene) is an intermediary product in the TNT synthesis, used in smokeless powder manufacture. Its properties in regard to dermatitis and cutaneous absorption are less than those from TNT.

Amatol is made by mixing molten TNT with ammonium nitrate. The principal skin hazards are from the TNT content, but because of the hydroscopic qualities of ammonium nitrate the workers' shoes and clothes become saturated and maceration of the skin readily occurs.

Ammonium picrate (explosive D) is an orange-colored crystalline powder made by reacting picric acid with ammonia. Workers exposed to it during the various stages of manufacturing and shell and bomb loading are affected with dermatitis. It is the dry picric acid and ammonium picrate which are prone to cause dermatitis and staining of the skin, hair, and clothing. Both of these are yellow dyes and are difficult to remove. When the eruption occurs, it most frequently appears on the face and begins with erythema progressing to papules, vesicles, and oozing which on subsiding result in desquamation. Hardening or desensitization occurs among the majority of workers. On entering the drying rooms where dust is very prevalent, the visitor experiences an extremely bitter taste. Workers are always more or less aware of this sensation. Toxic symptoms are comparatively rare.

Hexite (hexanitrodiphenylamine) is a yellow crystalline solid which stains the skin and hair a yellow color. This compound and its source, dinitrochlorobenzene, cause a vesicular dermatitis and irritation of the nasal mucosa.

PETN (penta-erythritol-tetranitrate) is one of the new explosives. Dermatitis has as yet not been reported.

RDX is also one of the new high explosives. Dermatitis occurs during the various steps of manufacturing and is caused by hexamine and related compounds which may be very irritating to the skin and mucous membranes.

### MISCELLANEOUS GROUP OF EXPLOSIVES

Tracer bullets can be seen in the dark because



the propellant charge on exploding sets fire to the igniter powder which in turn lights the tracer powder which slowly burns. These charges are located in the base of the bullet in a small concavity made especially for this purpose. Strontium and barium salts, together with resins, make up the principal ingredients. Dermatitis rarely occurs in workers handling these materials.

Incendiary and smoke charges are placed in shells and bombs to set fire to the target or to create a smoke screen. Many special mechanisms and materials are used for this purpose. Burns occur occasionally among workers handling white phosphorus and other incendiary materials.

#### PREVENTION OF DERMATITIS

The workers should be protected as much as possible from contact with chemicals and explosives by means of engineering control, such as general ventilation, local exhaust systems to carry away dust and fumes, air conditioning, and, where practical, by enclosed manufacturing processes. These controls are in use in many plants.

Protective clothing and underwear should be available and be laundered by the plant. The majority of plants insist on a change to clean coveralls, socks, underwear, and headcaps before beginning on the work shift<sup>7</sup>. Laundry service is usually furnished.

Clean gloves made of closely woven fabrics should be available for use on jobs where chemical dust is prevalent. Highly contaminated gloves only increase the exposure; therefore, they should be changed several times during a work shift. Or, soft washable leather gloves which fasten at the wrist may be used. Over these the worker should wear impervious sleeves that fasten over the wrist and extend above the elbows. Aprons of impervious materials may be worn.

Closely fitting caps or hoods which completely cover the hair will prevent staining. In practice this is seldom accomplished, because the workers like to wear their headgear at jaunty angles and thereby expose the hair.

Protective ointments of the type developed by Schwartz<sup>8</sup> may be used on those areas of the body which cannot be covered by protective clothing or industrial masks.

Petrolatum jelly used in the nostrils several times during a work shift will materially lessen nasal

mucous membrane irritation. However, if dust control is adequate, this will not be necessary.

Shower bathing at the close of work is of paramount importance in the prevention of occupational dermatitis in the munitions industry. This is compulsory in many plants.

If environmental control is adequate, it has been found that all workers need not use many of the enumerated protective measures. Those workers who have not developed dermatitis and those who have become "hardened" need not do more than wear clean work clothes daily, wash their hands frequently after excessive exposures, and bathe at the close of work. Only new workers, those who do not become "hardened" and those workers having mild dermatitis, need observe the recommendations in regard to gloves and protective sleeves, aprons, and ointments.

#### TREATMENT OF DERMATITIS

The patient should be removed from his job only if the dermatitis is severe and spreading. Workers having mild cases of dermatitis are usually kept under treatment while they are on the job. It has been found that the great majority of workers develop "hardening" or become less sensitive and are able to continue on with their work without further trouble.<sup>9</sup>

Patients with severe dermatitis should be removed from all contact with the offending chemical. Blood and urine examinations should be made to detect possible toxic systemic changes. Hospitalization may be necessary. The patient must be thoroughly cleansed to remove the offending chemical agents from the skin and hair. It is impossible to entirely remove the stain from the skin and hair, since it is fixed in the keratin layer, but it is gradually cast off by exfoliation.

Wet dressings, colloidal baths, borated talcum, and mild shake lotions should be used during the acute phases. As this stage subsides, bland ointments may be used.

In cases of exfoliative or severe, widespread dermatitis, dermatologic consultation may be necessary.

The patient who has recovered from a severe dermatitis caused by explosives is likely to still be highly sensitive and should in most cases not continue in the same type of industrial exposure.

#### SUMMARY AND CONCLUSIONS

1. The various explosives now being manufac-

tured in the United States have been discussed.

2. The types of dermatitis which are most likely to occur, along with their characteristics, are described.

3. Methods of prevention and treatment are discussed.

4. Dermatitis from contact with explosives, either during manufacture or while being loaded into military weapons, may be prevented to a considerable extent by proper preventive measures.

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#### DISCUSSION

DR. THOMAS W. MURRELL, Richmond: Before I go into the general discussion, I should like the privilege of expressing my personal gratification. I do not think there is anything more heartening in a teacher's life than to see the potential of a student working into the pattern of success that has been prophesied. Major Gant may be expected to go far in the dermatological field.

Major Gant's paper is an authoritative presentation of one phase of the large subject of industrial dermatoses. With all its war activities, Virginia has practically no munitions plants, and so in most of what he reports the Virginia dermatologists have had no practical experience.

We remember the TNT blondes who worked at Penniman during World War I, and most of us have seen severe sensitization from the picrate ointments popular

a short time ago, but for lack of experience there are no case reports to add to what the essayist has presented. Yet industrial dermatitis is a matter of extreme and increasing importance and this paper should be kept in mind because undoubtedly drifters from the arsenals of democracy will come our way and we should be ready to diagnose and treat them, should they be so affected.

There is a statement in Major Gant's paper, twice made, which one has the right to question on theoretical grounds. In the discussion of tetryl and ammonium picrate he refers to workers developing a dermatitis which clears up while the patient continues at work, and quotes Schwartz as considering this a desensitization or a "hardening". This is so entirely contrary to teaching and experience that one is justified in respectfully accepting it with the proverbial grain of salt. As a matter of fact, if a worker develops a dermatitis while at work and the diagnosis of industrial dermatitis is questioned, the worker lays off and recovers, and then the dermatitis recurs on return to work, this sequence is accepted by the courts as evidence of the nature of the eruption. It is strange that something entirely different should occur with two chemicals when the opposite occurs in other industrial irritants.

One thing which is impressive is the number of cases seen from substitute chemicals used in products which are denied their usual formulas because of war priorities. We have seen this in the cellophane industry and particularly with solvents. This statement is also true of the cosmetic industry.

It follows, therefore, that this whole subject is in a state of flux and much that is true today will be corrected when the chemical industry is re-established on a peace basis.

About a year ago the Sylvania Plant at Fredericksburg called me to see 27 girls in one department who had developed a dermatitis. They packed cellophane caps to use on the tops of bottles. The makers could not get the usual ingredients and used a substitute. Twenty-five of the twenty-seven girls had severe dermatitis.

Last week I saw a man from Langley Field who had severe dermatitis. His job was to unpack some parts which were packed in grease. It had been the practice to use carbon tetrachloride, but they could not get that and used a substitute. This man told me he had seen several others with a similar dermatitis.

This is particularly true in the cosmetic industry, in which it has been necessary to use substitutes.

CAPT. TOSON O. SUMMERS, (MC), U.S.N., Senior Medical Officer, U. S. Navy Mine Depot, Yorktown: I happen to be the senior medical officer at the Mine Depot at Yorktown, where we handle a whole lot of explosives. I am sorry I cannot tell you how much. We mix it up in cans like mush. We have had colored girls, white girls, and men.

I have my industrial medical officer here and am going to ask him to make a few remarks.

We have a lot of trouble with doctors. They tell a

man he has a TNT dermatitis, and when he comes back and is checked up most of the time he does not have it. Our people have locker rooms. They have to take off all their clothes or get their clothes wet, because to get to their working clothes they have to go under the showers. When they come out of work they have to take off their working clothes and go under the showers to get to their own clothes. We have not had a case of dermatitis in three years.

DR. THOMAS E. CONE, JR., Lieut. Comdr. (MC) USNR., U. S. Naval Mine Depot, Yorktown: As Captain Summers mentioned, we are not able to tell you how many people we have or how much explosive powder we are preparing; this much may be stated, we are preparing a great deal.

Our dermatitis problem is not very important at present, but it was so when our employees wore protective gloves. It seemed to us that the particles of powdered TNT getting into the gloves and the concomitant constant friction between the glove and the hand produced a dermatitis.

One thing in our favor is that practically all of our TNT workers are Negroes, and I think it is agreed that they are far less subject to dermatitis than white people. The white employees engaged in the handling of TNT have fortunately not been especially bothered with dermatitis. The cases we have seen have been mild.

We have had a large experience with TNT poisoning, particularly from the standpoint of blood changes, which is not under discussion today. But dermatitis, with us, is a very minor problem. Our loss of time from dermatitis is practically nil.

QUESTION: Doctor—in my section of the country we have a tent factory. The employees sew the pup tents together, and I notice a lot of allergic dermatitis has developed from that. I should like to know what chemical produces that.

DR. CONE: I do not know.

THE CHAIRMAN: I will ask Dr. Gant to answer that question for you, if he can.

DR. GANT, closing the discussion: I wish to thank Dr. Murrell for his kind remarks and to thank the other gentlemen who have discussed my paper.

The Dermatoses Section has the records of some 80 plants in the United States and Canada that manufacture and handle explosives. The records cover several thousand cases. We know that "hardening" does occur in the large majority of cases of allergic occupational dermatitis who stay on the job. As an example, about eighteen months ago all the munitions factories had an abundance of munitions and laid off a great number of people. When those people returned to work there was a sharp increase in the number of cases of dermatitis, but after a short time and after continuing work, the number of cases greatly decreased.

As to tenting materials, they are being treated with various finishes. Most of these compounds are antimildew agents, waterproofing substances, and in some instances flame-proof chemicals. A great many of the antimildew compounds are primary skin irritants when used in strong concentrations, and many of them are sensitizers in lower concentrations. We have had no complaints of dermatitis from the flame-proofing chemicals. One of the waterproofing chemicals has caused an outbreak of dermatitis. It was Japan Wax obtained from the plant *Rhus vernicefera*, member of the same family as poison ivy. In the particular instance cited by Doctor —, I cannot tell which of these chemicals may be causing the dermatitis as I do not know the materials with which the tenting was treated. If Doctor — wishes to find out what chemicals are used in the tenting in question, an inquiry directed to the Office of the Quartermaster General, War Department, may give him the information.

### Penicillin Aids Closure of Bedsores.

Successful closure of bedsores was carried out with the aid of penicillin administered by injection and locally, Lieutenant Colonel John D. Lamon, Jr., and Captain Eben Alexander Jr., Medical Corps, Army of the United States, report in the February 17 issue of *The Journal of the American Medical Association*. The wounds were closed with sutures of cotton.

They say that much has been published concerning the care and healing of bedsores in recent years, but, as far as they can determine, no reports of the successful closure of these sores have so far ap-

peared in the literature.

The case they describe was that of a soldier with three bedsores on his back, all of them infected. To speed the healing of the sores so that a necessary operation could be done on his spine near one of them, penicillin was injected into a muscle for twenty-four hours. Then the sores were carefully excised, penicillin injected into the tissues around each wound and they were closed with sutures. Ten days later the sutures were removed from the wounds which remained clean and free of infection. The operation on the spine was done three weeks after closure of the bedsores.



## GAS GANGRENE—REPORT OF A SEVERE CASE WITH RECOVERY\*

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There are five types of gas gangrene classified by Eliot, Ellsworth, and Easton<sup>1</sup> as follows:

1. Localized anaerobic infection of wound.
2. Slowly spreading anaerobic infection of a wound.
3. Group type—where single muscle or a group of muscles is attacked.
4. Massive type—where a whole segment of a limb is attacked.
5. Fulminating type—where an overwhelming infection and toxemia usually results fatally in 24-48 hours.

Many of the cases reported in the literature which have responded so dramatically to roentgen therapy apparently fall into the category of one or the other of the first three types, classified above, which, comparatively speaking, are relatively benign. Jeffrey,<sup>2</sup> with the Royal Army Medical Corps, in 1940, describes the frequent occurrence of one of the localized forms with little or no general disturbance. He reported that such cases responded readily to simple incision and drainage of the wound.

In civil and industrial practice the occurrence of gas gangrene is by no means a rarity. However, survival of a case of the fulminating type with massive infection and overwhelming toxemia is sufficiently infrequent to arouse considerable interest.

The case herein described was of the fulminating, toxemic variety, and presented unusual extension of the associated skin discoloration and cellular crepitations to the region of the clavicle on the side of the affected lower limb where the process started. In none of a series of 17 cases reported by Eliot *et al.*,<sup>1</sup> or in a series of 43 cases reviewed by Eliason, Erb *et al.*,<sup>6</sup> was any mention made of the spread of crepitations higher than the iliac crests in cases where the lower limb was the seat of infection. According to Mullally,<sup>3</sup> the upper limit of the gas precedes the upper limit of the gangrene by several inches, while, conversely, the gangrene of muscle

extends higher than that of the skin. These precepts thus serve to emphasize more vividly the massive and seemingly overwhelming type of infection with which we were dealing.

The armamentarium of therapy for gas gangrene and clostridium *Welchii* infections is voluminous. Perusal of the literature revealed that sulfonamides, muscle excision, roentgen rays, anti-serum, hydrogen peroxide, zinc peroxide, and amputation are either alone or in combination the prevailing modes of therapy.

It has been ably demonstrated experimentally by Hawking and Frank,<sup>4</sup> and by Bonnin and Fewner<sup>5</sup> that the sulfonamides have a definite bacteriostatic effect on the clostridium *Welchii*.

Muscle excision is probably not without merit in the first three types of gas infections described above. It is difficult to realize its practicability in the fulminating massive infection. Further, Jeffrey<sup>2</sup> states that he never saw a case of gas gangrene of the lower limb survive where radical excision had been carried out, and amputation should be considered in every such case.

The use of roentgen therapy is productive of extreme enthusiasm on one hand and disappointment on the other. It is only just to mention that some apparently spectacular results have been reported with the use of this agent, although in many instances it has been utilized in combination with other modes of therapy.

In a review of 43 cases, Eliason, Erb and Gilbert<sup>6</sup> admit that the value of serum as a prophylactic has not been shown, although they do conclude that serotherapy itself has established its value. Nevertheless, the literature reveals that its use in the average civil or industrial case has provoked only a minimum of enthusiasm.

Anemia is by far the most common associated symptom of this disease<sup>1</sup>; Eliason *et al.*,<sup>6</sup> call attention to the marked anemia produced in clostridium *Welchii* infections. Thus, the value of frequent transfusions of whole blood cannot be over-estimated.

The peroxides, hydrogen and zinc, by their abil-

\*From the Medical Department of the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia.

Read before the Warwick County Medical Society, April, 1944.

ity to liberate oxygen, prevent the multiplication of anaerobic organisms. This valuable therapeutic measure should be utilized in gas infections whenever possible.

Our brief experience with penicillin, which it was our good fortune to obtain for treatment of avirulent hemolytic staphylococcus infection following hip disarticulation and closure of the guillotine amputation, revealed its therapeutic efficiency in treatment of staphylococcal infections. Most noteworthy was a sharp and sustained drop in the percentage of polymorphonuclear neutrophilic leukocytes concomitant with the administration of the penicillin. So far as we know similar alterations in the blood picture during this type of therapy have not been reported.

In view of the fact that no blood dyscrasias have been reported due to penicillin thus far, it seems that further investigation of this neutrophilic alteration would be of interest.

#### CASE REPORT

D. S., a white male machinist's helper, caught his leg in a boring mill on January 29, 1944, and sustained an extensive laceration of his left lower extremity. He was promptly transported by ambulance from the scene of the accident to the company hospital.

Examination revealed a moderately shocked 21 year old white male in considerable pain. The left leg was lacerated on its lateral aspect extending from mid-thigh above to the region of the lateral malleolus below, penetrating the fascia lata above and fascia of the leg below, with herniation of all the immediately subjacent muscle bundles. At the region of the knee, the laceration entered the popliteal space on the postero-lateral aspect of the joint where there was considerable tearing of the deeper tissues. Except for the area in the popliteal space, the entire laceration was of the "incised" type with minimal tearing of superficial and deeper structures. There was little, if any, bleeding of arterial origin apparent at the time and no visible evidence of contaminating material contained within the wound.

After preliminary treatment for shock with good response, the margins of the wound were infiltrated with 1 per cent novocaine solution, and closure in layers was accomplished with no marked difficulty. Three soft rubber drains were left *in situ*.

After hospitalization, a prophylactic dose of combined tetanus and gas bacillus antitoxin was given. Subsequent laboratory work revealed the hemoglobin

and red blood cells to be 64 per cent, and 3,500,000, respectively. On the evening of the day of hospitalization, his pulse became increasingly more thready and finally imperceptible with blood pressure reading of seventy (70) systolic, the diastolic pressure being undeterminable. Immediate intravenous infusion of two (2) units of blood plasma resulted in a gradual but persistent improvement and the systolic pressure held to a level of 100-130. On the following day, he reverted to a similar state of pallor, profuse perspiration and thready, rapid pulse and was given another unit of blood plasma, but with no visibly beneficial effect on this occasion. He became febrile with a temperature range of 102°-105.4°F., and sulfadiazine therapy orally in full therapeutic doses was instituted.

On the third hospital day transfusion of 500 cc. (five hundred) of citrated whole blood in addition to another unit of plasma was given. The hemoglobin and red cell count were 28 per cent, and 1,510,000 respectively. The blood sulfadiazine level was 4.4. The patient was in a disoriented, irrational, toxemic state.

On the fourth hospital day inspection of the left leg revealed a massive, varied colored swollen limb. The leg presented a bluish, red, black discoloration of varying shades extending to the left lower quadrant of the abdomen, where the discoloration faded to a pinkish light bronzed hue. The entire scrotum was edematous and its left side was dark blue in color. The limb was covered at varying intervals with large emphysematous blebs with foul gaseous odors of decomposition escaping from those that were ruptured. Subsequent cultures from the bleb fluid were positive for *B. Welchii*; later, repeated blood cultures were negative.

The patient's general condition at this time could be called moribund. The severe toxemia, hyperpyrexia, and degree of exsanguination precluded any possibility of an amputation. The daily transfusions and full therapeutic doses of sulfadiazine were continued. The entire wound was laid open. The underlying muscles (varying in color from yellow to greenish-black and covered with tenacious, foul grayish-yellow exudate) were stripped from the fascia and multiple perforated rubber tubes were inserted through which copious hydrogen peroxide irrigation was carried out every two hours.

On this regime of daily transfusions of citrated whole blood, sulfonamides orally, peroxide irrigations of the wound, and measures to maintain the



patient's nutrition, his general condition was surprisingly and markedly ameliorated. After the fifth blood transfusion his hemoglobin, red count, and white count were 63 per cent, 3,410,000, and 13,000, respectively. The blood sulfadiazine level reached 7.8.

Particularly noteworthy at this time was the ex-

tension there was a profusion of crepitations and brawny swelling palpable over this region. Subsequently two (2) incisions were made on the antero-lateral aspect of the left side of the chest wall through the skin and subcutaneous fat revealing the underlying muscle to be normal in appearance. Several days thereafter there was an abundance of sero-

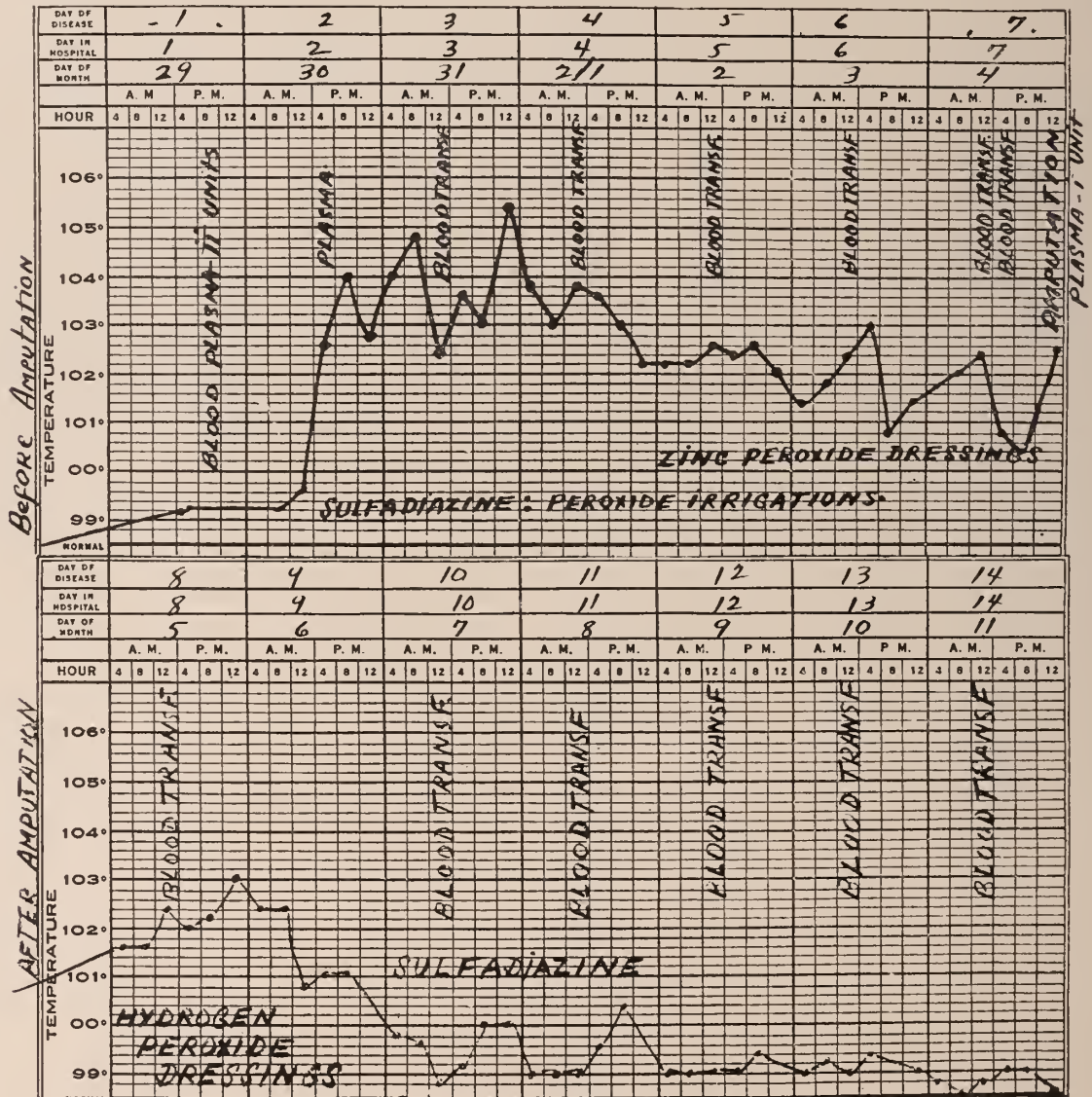


Figure I.

tension of the discoloration (which in this situation was of a reddish brown hue) over the left side of the abdomen and the anterior, and anterolateral aspects of the left side of the chest wall almost to the level of the clavicle. Concomitant with this ex-

sanguinous drainage. This released considerable tension, and much pain and discomfort, which had hitherto been referable to this region, was markedly alleviated.

By the seventh hospital day there was such per-



sistent and sustained improvement in spite of the unusual extent and severity of the local gangrenous condition that a high Guillotine amputation was done under open drop ether anesthesia. A blood plasma infusion was started while the patient was on the table.

The immediate post-operative condition appeared very favorable, and there was minimal, if any, evidence of surgical shock. As shown by the graphic comparison (Figure I) the temperature curve over the next ten day period gradually leveled off and approached normal. Concomitant with this compara-

was possible to ascertain, were considered to be free of infection. Thorough medical check-up revealing entirely negative findings, the optimum time for closure of the stump was thought to be at hand.

Accordingly, under gas-oxygen-ether anesthesia, the proximal bone stump which measured no more than 7.5 cm. in length was dissected free of soft parts and disarticulated. The skin was then closed under little tension except for a small opening about the diameter of a small lemon situated in the center of the anterior aspect of the stump which could not be closed.

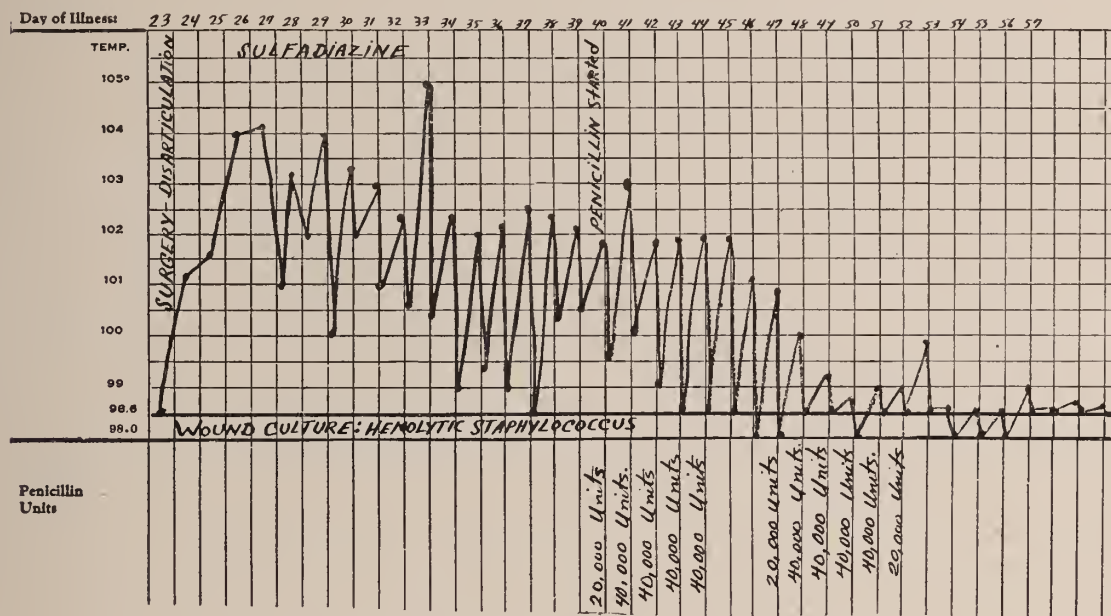


Figure II.—Temperature curve before and after penicillin therapy.

tively afebrile state the exposed muscle bundles rapidly assumed a normal, "beefy" appearance. By the eleventh post-operative day they were more or less completely covered by healthy granulation tissue. Daily hydrogen peroxide irrigations and wet peroxide dressings were applied to the exposed stump.

The daily blood transfusions and sulfadiazine were discontinued (hemoglobin 93 per cent, R.B.C. 4,236,000). The edema and discoloration of the scrotum and chest wall gradually disappeared, although the crepitations palpable under the skin of the chest persisted for a considerable time thereafter.

By the twenty-fourth post-operative day, the muscle bundles and skin of the stump, so far as it

The operation was prolonged by the necessity of removing much muscle tissue and, during the latter part of this operative procedure, the patient lapsed into what appeared to be a state of irreversible shock. In conjunction with routine shock therapy, three units of blood plasma were given in quick succession and at a rapid rate. After approximately two hours there was some response. The pulse now became perceptible and a systolic pressure of 60 was obtained. On the evening of the same day there was somewhat less apprehension and he seemed to have definitely passed the state of extreme vascular collapse.

Starting from the first post-operative day he was again febrile, exhibiting a septic type temperature

curve, usually reaching its peak of 102°F.-104°F. in the afternoon or late evening. Coincident with this there was a gradual but progressive fall in the hemoglobin and red blood cell levels until by the fifth post-operative day they were 45 per cent and 2,800,000, respectively.

Subsequent examination of the stump revealed that the wound had more or less completely broken down with copious purulent drainage exuding from several sinus like tracts. Smear and cultures of the

illin therapy was instituted, the method of administration being by continuous intravenous drip in pyrogen-free normal saline solution. The apparatus was so regulated that in each 24-hour period 40,000 units of penicillin and 2,000 c.c. of normal saline was not exceeded.

After a total of 180,000 units of penicillin by the intravenous route over a period of 4½ days (see Figure II). There was a definite, progressive fall in the usual evening temperature peak, wound

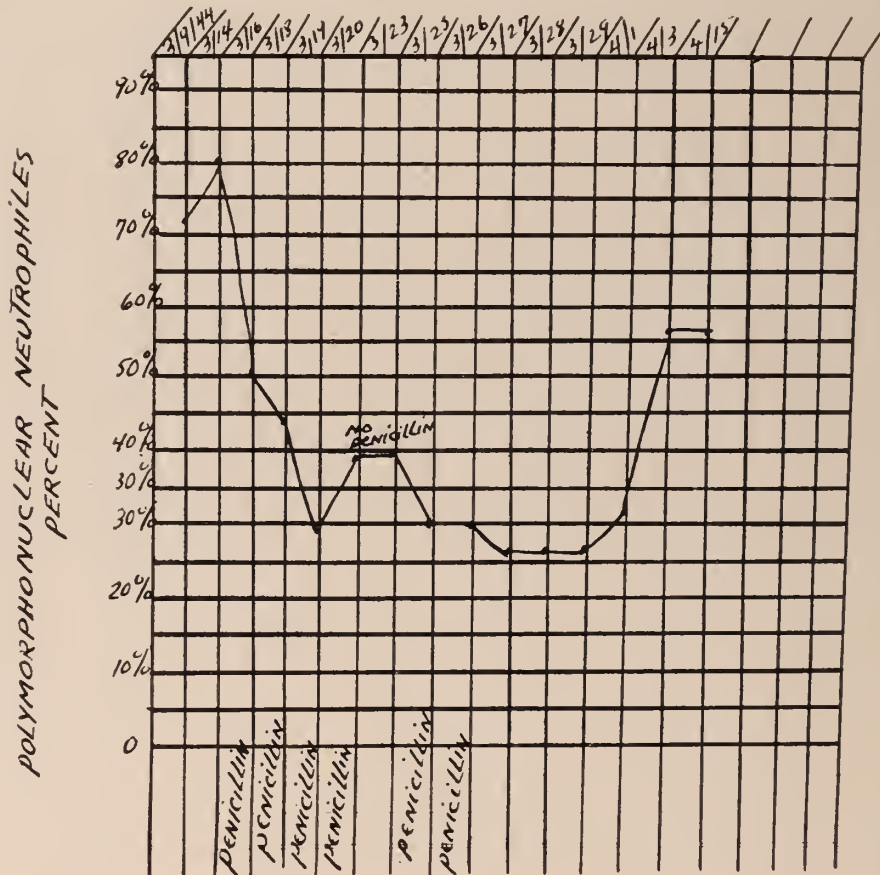


Figure III.—Sharp and sustained decrease in poly count coincident to penicillin therapy.

exudate revealed a stain of hemolytic staphylococcus. Roentgenograms of the pelvis revealed no bony pathology. Sulfadiazine, in full therapeutic doses, was again started and whole blood transfusions at 48-hour intervals were given with little, if any, effect on the septic process. Repeated daily blood cultures were negative. The patient was again running a downhill course with no noteworthy therapeutic response to the sulfadiazine; accordingly, the drug was discontinued.

On the seventeenth post-operative day penic-

drainage was considerably less, and the patient was improved generally.

During the penicillin therapy daily blood studies revealed a rather progressive fall in the polymorphonuclear neutrophile count from 80 per cent to 40 per cent, and on the fourth day of penicillin therapy to 29 per cent. The lymphocyte count was proportionately increased. There was not, however, any notable decline in the total white blood cell count, a level of 9,000-12,000 cu. mm. existing during this time. This, of course, seemed to preclude

the existence of a true agranulocytosis (malignant neutropenia). A heterophile test revealed no presumptive evidence of infectious mononucleosis, and the patient's general and local condition were better than at any time since the hip disarticulation and closing operation had been performed (see Figure III).

Notwithstanding, the penicillin therapy was discontinued for two days, during which time crude liver extract, a small stimulating transfusion and pentnucleotide were given, the latter as "prophylaxis" against what we thought might have been an incipient agranulocytosis.

Another 200,000 units of penicillin were given by the same method during the next five days, and on the third day of this second course of penicillin the patient became afebrile and from that time on progressed smoothly towards eventual, uneventful recovery.

Seven days after cessation of penicillin therapy the white blood cell count was 9,800 with 56 per cent polys and 44 per cent lymphocytes. The R.B.C. and hemoglobin levels were within normal limits. Wound drainage was minimal and healthy granulations began to appear.

By the thirty-fourth post-operative day only a small area of the wound remained open, and this looked clean and healthy.

On the sixty-fifth post-operative day the patient was discharged from the hospital. He was well.

#### SUMMARY AND CONCLUSIONS

1. A severe case of gas gangrene with recovery is reported.

2. The favorable effects of large doses of the sulfonamides is worthy of attention. In this case the action was definitely bacteriostatic.
3. As in all cases of gas gangrene, the severe anemia in this case was one of the outstanding, accompanying symptoms.
4. The frequent large transfusions, while apparently beneficial in this case, may have been a factor in the slow recovery of the blood picture through depression of the hemopoietic centers.
5. Attention is drawn to the decided shift in the differential picture, coincident with the use of penicillin. There was no abnormal change in the total leukocyte count.
6. In this case penicillin was not used in the treatment of the gas gangrene but in the treatment of a subsequent hemolytic staphylococcus infection.
7. Progressive recovery started with use of the penicillin.

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#### Film on Reconditioning of Amputees Released for Public Showing.

"Swinging into Step," a motion picture which shows how soldiers who have lost arms or legs are prepared by the Army Medical Department not only for their return to civilian life, but for their "come back," has been released for public showing. Originally produced as a restricted "training film," for showing to the men, themselves, as soon as possible after they are wounded, this inspiring picture is now

available to clubs, schools and other organizations as well as commercial movie houses. Requests should be directed to the Public Relations Officer of the nearest Army hospital.

The War Department decided to release this film not only because of its informative value but to encourage a proper attitude on the part of the public toward disabled soldiers. The film is also of interest to medical men because of its portrayal of the Army Reconditioning Program.



## THE TREATMENT OF CONGESTIVE HEART FAILURE\*

BRUCE R. POWERS, M.D., F.A.C.P.,  
Knoxville, Tennessee.

I think the subject of congestive heart failure, or myocardial insufficiency, is one of the most interesting in the entire practice of medicine. To me, its fascination lies in its improbability and the almost dramatic results that can, at times, be obtained in its treatment. A great number of conditions seen by internists are slow to respond to treatment and so it is a pleasure to handle a syndrome which responds quickly. Certainly congestive heart failure is no unusual condition and I imagine that all of you gentlemen, unless restricting yourselves to certain specialties, have one or more patients in an active stage at the present time. Congestive heart failure develops eventually in more than half of all individuals with organic heart disease and in a few individuals without organic heart disease but with sudden abnormal strain, as in the case of prolonged and extreme paroxysmal tachycardia in infancy.

## PHYSIOLOGY

Strain upon a diseased heart impairs its already below par efficiency so that it is unable to maintain a satisfactory circulation. The myocardium often weakens long before gross signs of congestion appear. Left ventricular failure is the most common type of heart failure. When this type of failure occurs from the constant severe strain of hypertension, dilatation is superimposed on the already hypertrophied ventricle. It is unable to force from its chamber the blood received from the right ventricle. The left auricle dilates, the lung vessels become engorged and the pulmonary arterial pressure is greatly increased. The right ventricle must increase its activity to make up for the added burden thrown upon it. If the right ventricle fails because of left ventricular failure, mitral stenosis or pulmonary fibrosis, it is not able to pass on all the blood it receives from the lungs to the left side of the heart.

Occasionally the heart fails when both ventricles are affected from some common strain such as severe rheumatic carditis. Then there is congestion in both the pulmonary circuit and the systemic veins. Certainly the primary evidence of advancing weakness in either ventricle is congestion behind that particular

ventricle—in the lungs in the case of the left ventricle, and in the great veins and the liver in the case of the right. Of far less significance are any manifestations of failure of the circulation in front of the weakened ventricle (shock).

These physiological factors are briefly mentioned because they are of the utmost importance in treatment and prognosis. It is insufficient just to make a diagnosis of myocardial insufficiency. The underlying factor or factors should be determined. If chronic hypertension or mitral stenosis is causative, the outlook is usually better, as many of these patients can be controlled for many years with proper therapy. In contradistinction, if syphilitic aortitis or coronary occlusion is causing the failure the prognosis is considerably poorer.<sup>1</sup> If paroxysmal dyspnea is present the outlook is poor as these patients usually do not survive long.

## TREATMENT

I would divide the treatment of congestive heart failure into three parts: 1. Rest. 2. Drugs. 3. Other measures.

1. REST—This is a cardinal therapeutic measure in heart failure and often it alone suffices to restore compensation. A severe grade of insufficiency demands absolute rest; this patient should be fed and moved. He should be in the position in which he is most comfortable and this usually will be propped in bed on a high angle or in a chair. Remember that the recumbent position is not a restful one so far as the heart is concerned.

I would like to call to your attention an article in a recent issue of the *Journal of the American Medical Association* by Dr. Samuel Levine, of Boston, regarding some harmful effects of recumbency in heart failure.<sup>2</sup> He stresses the fact that venous return is markedly facilitated by recumbency, thus increasing the strain upon the right side of the heart. If the left ventricle is so weak that it cannot keep pace with the increased output of the right ventricle, pulmonary congestion and resultant breathlessness may actually increase. Likewise, he emphasizes the fact that a disappearance of edema of the feet and legs may merely mean a shift of fluid to

\*Read before the Wise County Virginia Medical Society, Norton, September 22, 1944.

the back or buttocks, production of a hydrothorax or an increase of pulmonary congestion. One point he makes which is very interesting is that fluid in the legs is unsightly but does comparatively little harm, whereas fluid in the lungs is a dangerous handicap.

Milder degrees of insufficiency do not require absolute rest, though rest in bed for a few days or longer produces good results. The patient who has insufficiency with moderate exercise should be restricted to those activities which do not produce dyspnea and related symptoms.

Many persons with mild congestive failure continue to work through necessity or inclination. Their activities can be helpfully controlled. The housewife with mitral stenosis can lie down for an hour or so during the day. The office worker can rest over the week-end. Individual factors must be evaluated and suggestions made on this basis. It is folly to insist that a hard-driving business man with hypertension give up his work completely; in the first place, he probably will not do it, and, secondly, he will worry to such an extent that he will be harmed more than helped by rest.

2. DRUG THERAPY—*Digitalis* is, of course, the mainstay in the management of congestive failure and is unquestionably the most important single drug that we have for this purpose. It is still a mystery as to how the active digitalis bodies cause such remarkable changes in the muscular contraction of the heart. The main action is on the heart muscle fiber and it brings relief by virtue of its ability to increase the force of myocardial contraction. When digitalis increases the force of contraction in the failing heart the ventricles empty more completely. The heart becomes more capable of caring for an increased venous return and the venous pressure approaches normal.

Besides increasing the force of contraction, digitalis also increases the mechanical efficiency of the heart muscle; for a given amount of work done, less oxygen is consumed.<sup>3</sup> The present conception of the action of digitalis minimizes the importance of cardiac slowing as a factor in the beneficial effect of the drug in heart failure. Improvement is noticed in many cases before significant slowing is observed. It is fortunate that the quieting effect of digitalis on the rapid rate of failing hearts is accomplished through the basic mechanism of improved muscular

ability; otherwise, the results would be less good. Where auricular fibrillation is a component of heart failure, the drug acts directly on the conduction system and reflexly on the vagus to block auricular impulses. Thus the ventricle which has been beating rapidly and irregularly becomes slower and more regular.

Full doses of digitalis cause a decrease in the diastolic size of the heart as observed in teleoroentgenograms, which make for a more efficient heart when it is dilated in heart failure.

The diuretic action of digitalis is entirely dependent upon the improvement in the circulation: thus there is no diuretic action *per se*. As venous pressure is reduced, edema fluid is restored to the blood, thus allowing its excretion. Renal function is also improved because of relief of vascular congestion in the kidney. In spite of the fact that digitalis is efficient in mobilizing edema fluid, about 50 per cent of patients with myocardial insufficiency will require specific measures to increase diuresis.

It is important to understand the unitage and assay of this drug. One U.S.P. digitalis is the equivalent of .1 gm. of the International Standard digitalis powder. Digitalis prepared by the various drug companies is not assayed on the same basis. It is best to become familiar with one or two reliable brands and to call for these on prescriptions rather than indiscriminately to use various brands. Under-dosage or over-dosage can be avoided in this manner. The safest method of administration is by use of a reliable powdered leaf or tincture. Various digitalis substitutes or fractions have no advantage over these galenical preparations. Strophanthus has no advantage over digitalis; its absorption is unreliable and frequently produces diarrhea. It is important also to remember that these preparations are relatively inexpensive, and this is important as the drug frequently must be taken over a long period of time.

Digitalis is readily absorbed from the intestinal mucosa and exerts its full action on the heart within six hours. Electrocardiographic evidence of initial myocardial action is detectable within two hours following a large oral dose of the drug.<sup>4</sup> It is also easily absorbed from the rectal mucous membrane and this route of administration can be used if the oral route is not feasible. Digitalis preparations are painful when given subcutaneously or intramuscu-

larly and absorption is erratic from these sites.

Thus, the oral route is preferable and rectal second in value. If the rectal route is used, the diluted tincture or water soluble preparations should be selected. A cleansing enema should be given and the digitalis should follow this. The dosage and interval between doses are the same as for oral administration.

In emergencies, when minutes rather than hours are of importance, the intravenous route may be used. Water soluble purified digitalis fractions or strophanthus glycosides (ouabain) may be given very slowly and in carefully calculated doses by vein. The total dose is 1 mg. divided into four doses at two hour intervals.

It should be known if digitalis has been given at an earlier time. Since the excretion of the drug is slow and its action continues over a period of several days to several weeks after it is discontinued, it is important to know how much digitalis has been given and over how long a period before additional doses are given.

For initial digitalization of a moderately or severely ill patient with congestive failure large doses should be given so that optimal effects are obtained within twenty-four to forty-eight hours. This total amount will represent 1 to 1.5 gms. (15-22 gr.) of the powdered leaf or 15-22 cc. of the tincture (U.S.P. XII). This can be divided into equal doses and given every four to six hours. If the failure is severe and no digitalis has been given within two weeks the total amount can be given in three doses at six hour intervals. Following this, the dosage is dropped to .12 gm. one to three times daily until the optimum maintenance dose is obtained. For milder cases under close observation .1 gm. three times daily may be used. Age is not a significant factor in digitalis dosage.

For maintenance of best results a sufficient amount must be given to replace that which is destroyed or eliminated by the body and certainly there is no hard or fast rule for calculating this. It has been thought by some investigators that approximately .12 gm. of the leaf or 1.2 cc. of the tincture was lost daily, but there are such wide variations in this that a replacement dosage of the same amount may be too small for one patient and too large for the next. It may be said that most patients require .1 gm. of the leaf or 1 cc. of tincture once or twice daily.

In the final analysis, however, the dose is that which will maintain the heart muscle at its best efficiency and this is found only by close and careful observation of the patient.

*Morphine*—This drug is of definite value in the relief of dyspnea, pain and coughing which may be prominent factors in congestive failure. It is frequently very necessary in paroxysmal dyspnea to terminate an attack and produce sleep. I have recently used demerol in patients with congestive failure. This is a new synthetic drug related to atropine in chemical structure but having the analgesic effect of morphine. Satisfactory relief of dyspnea has been obtained and some of the objectionable side actions of morphine have been avoided. This drug does not have the marked depressant action of morphine on the respiratory centers and consequently may be safer than morphine in elderly patients. The dose is 50-100 mg. given intramuscularly.

*Diuretics*—The drugs having the most potent action are the mercurials. Mercury was a component of the famous Guy's Hospital pill which contained calomel, squill and digitalis. Calomel, however, has been largely displaced by the organic mercurial drugs. Merbaphen, or novasurol, was originally introduced for antiluetic treatment but was found that its diuretic action was more potent than its luetic action. Salyrgan was later introduced and found to be superior by reason of lessened toxicity. Other mercurials are mercupurin and mercurin and these are of equal value and toxicity as salyrgan. These mercurials probably act by preventing or reducing tubular reabsorption of water.

The diuretic action usually begins two to three hours after administration and persists for twelve to twenty-four hours. Fluid output is greatest in the early stages and the drug is preferably given in the morning so that urination during the night will not interfere with sleep. In markedly edematous individuals the urine output may increase to several liters. The drug may be repeated in a few days' time. Tolerance is not usually developed and salyrgan may be used over a period of years. If acid forming salts are given prior to the use of the mercurial, the action is potentiated. In the presence of kidney damage the mercurials should be avoided.

The xanthine group of drugs—caffeine, theophylline and theobromine—are sometimes of value be-



cause of direct myocardial stimulation. They do have a valuable place by virtue of a diuretic action in cardiac edema and in paroxysmal dyspnea. In the latter condition, relief is obtained by myocardial stimulation, relaxation of the bronchial musculature and lowering of venous pressure. Aminophyllin (theophylline with ethylene diamine) is the preferable drug and should be given intravenously. The dose is .25-.5 gm. suitably diluted. I feel that ampules of this drug are as necessary as is morphine to have for emergency heart patients. These drugs are also of value in cardiac edema and may be used by mouth. As you know, there are numerous preparations and combinations. The diuretic response is less than that obtained by the mercurials but they may be used in the presence of renal insufficiency where the mercurials are contraindicated.

Other diuretics which will not be considered in detail are acid forming salts, glucose, sucrose, urea, sodium chloride and potassium salts.

*Oxygen*—Inhalation of this element is at times very necessary in combating acute failure and in tiding patients over certain complications. In paroxysmal dyspnea it is of definite value in alleviating these distressing symptoms. It is probably more effective when combined with helium.

3. OTHER MEASURES—*Diet* is a factor of importance in the management of congestive failure and the general condition of the patient must be the guide as to the food and fluid intake. Small quantities of easily handled food divided into several small feedings daily will throw less strain upon the circulation.

I feel that the Karrell diet which limits the patient's intake to approximately a quart of milk daily

is of value for a few days. With improvement in the patient's condition, the diet is increased but large meals should always be avoided. Accessory food factors should be given if indicated.

*Venesection* is occasionally a valuable procedure in a patient with severe congestive failure. It may relieve pulmonary edema and lower high venous pressure in patients who have not responded to other methods of therapy.

Another procedure which may be helpful temporarily is the application of blood pressure cuffs or tourniquets to the extremities so that venous return is cut off and thus much blood is sidetracked. This may be helpful in pulmonary edema. There is a hazard here of phlebitis with a resultant pulmonary embolism.

#### SUMMARY AND CONCLUSIONS

1. Congestive heart failure is a frequent and serious condition encountered in medical practice.
2. Physiological factors are mentioned which are of importance in the management of this condition.
3. Treatment is considered from the standpoint of rest, digitalis therapy and other measures, with emphasis upon rest and digitalis, as these two factors are of paramount importance in bringing relief to these patients.

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3. Goodman and Gilman: *The Pharmacological Basis of Therapeutics*, page 506.
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203 Medical Center Building.

#### Combat Badge for Medical Personnel.

A special badge has been authorized for Medical Department personnel who daily share with the infantry the hazards and hardships of combat. Made of silver, the Medical Badge is elliptical in shape with the caduceus and the Geneva Cross superimposed on a litter surrounded by a wreath of oak leaves. It is to be worn on the left breast above decorations and service ribbons.

The badge was established in recognition of "the important role being performed by medical personnel on duty with infantry units, especially infantry battalions." Enlisted and officer personnel below field grade (major) and regimental surgeons regardless of rank are eligible for the badge if they have seen combat service with the infantry since December 7, 1941.

## PUBLIC HEALTH

I. C. RIGGIN, M.D.,

*State Health Commissioner of Virginia*

The report of the Bureau of Communicable Diseases of the State Department of Health for February, 1945, as compared with the same month in 1944, and for the period of January through February, 1945, compared with the same period in 1944, follows:

	Feb.- 1945	Feb.- 1944	Jan.- Feb.- 1945	Jan.- Feb.- 1944
Typhoid and Paratyphoid Fever--	6	4	10	9
Diarrhea and Dysentery-----	151	216	393	335
Measles -----	191	3,018	251	4,008
Scarlet Fever -----	567	302	926	508
Diphtheria -----	36	27	62	50
Poliomyelitis -----	5	0	9	1
Meningitis -----	36	88	59	157
Undulant Fever -----	1	2	3	6
Rocky Mountain Spotted Fever--	0	1	0	1
Tularemia -----	8	1	10	8

## PENICILLIN THERAPY IN GONORRHEAL INFECTION

Evidence is accumulating that sulfathiazole is becoming progressively less effective in the treatment of the individual infected with gonorrhea than when it first became available for general distribution. Much the same experience is being observed with the other sulfonamides in the treatment of gonorrhea. Early reports on the use of these drugs gave a "cure" rate of between 62 and 85%. Late reports reveal a "cure" rate of as low as 16%. The reasons given by the many investigators for this phenomenon are too varied to allow for discussion here.

The use of penicillin in the therapeutic management of the gonorrheal infection appears to be the new hope upon the horizon. However, if an experience such as that with the sulfonamides is to be avoided every physician treating a case of gonorrhea with penicillin must take cognizance of the fact that it may be possible to produce epidemics of the resistant strains of the organism through inadequate treatment with the drug.

The total dosage of penicillin used by the various investigators has ranged from as low as 60 thousand oxford units to as high as 300 thousand oxford units. Although it cannot be stated as a certainty at the present time, there is accumulating evidence that a smaller total dosage than 150 thousand oxford units should not be used in the treat-

ment of the individual infected with gonorrhea.

The following treatment regimen appears to be the most effective at the present time. The total dosage of penicillin consists of 150 thousand units; 20 thousand units are given every 3 hours intramuscularly except for the last injection, which consists of 10 thousand units, thus making the total of 150 thousand oxford units. The fact that the three hour regimen of drug administration is distributed over the entire 24 hour period generally makes it necessary to provide some type of hospitalization. The efficacy of bed rest in the treatment of gonorrhea is well known. For these reasons this method of management is deemed the most efficient at the present time.

Inasmuch, however, as there are many patients in whose case hospitalization is not available or practicable, treatment schedules which can be used on an ambulatory basis have been sought. At the present time the following two schedules appear to have yielded fairly adequate results:

The first schedule calls for the administration of 30 thousand units of penicillin at each of the following times: 9 A.M., 11:30 A.M., 2 P.M., 4:30 P.M., and 9 A.M. the following day.

The second schedule, which may be completed in seven and one-half hours, consists of 35 thousand units at 9 A.M., 35 thousand units at 11:30 A.M., 40 thousand units at 2 P.M., and 50 thousand units at 4:30 P.M.

If adequate dosage of penicillin is used over a sufficiently long treatment period, and if the treated cases are carefully observed for failure and those failing are treated with larger doses of penicillin administered over longer periods of time it is hoped that the loss of therapeutic efficiency experienced with the sulfonamides in the treatment of gonorrhea may be avoided.

IMMUNE SERUM (GAMMA) GLOBULIN TO BE  
RELEASED TO PHYSICIANS

The State Health Commissioner has been notified by the Medical Director of the American Red Cross that gamma globulin is now available for distribution to physicians, hospitals and clinics throughout Virginia. This material, a by-product of the Amer-

ican Red Cross blood plasma bank which has been declared surplus by the United States Navy, is to be returned to civilians through the State Health Departments. There is no charge for this biological product; it will be distributed free to physicians and cannot be sold.

Gamma globulin administered intramuscularly is used for the prevention or modification of measles

at the discretion of the physician after a child has been exposed. The potency of this product produced in the war effort is said to be many times as great in immune substances as flood fractions formerly used to prevent or modify measles.

Recently a quarterly supply of the gamma globulin was ordered. This material accompanied by directions will be sent to physicians upon request.

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## CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

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This white, 29 year old multipara consulted her doctor in the sixth month of her pregnancy. She had four children and there had been no complication in either her pregnancies or labors. At a previous pregnancy her blood Wassermann was negative. In the present pregnancy her blood pressure had been consistently low and she was undernourished. Six weeks before term she developed ulcers on arms and legs. The lesions were punched-out and showed little tendency to heal. They were treated with ammoniated mercury and aluminum acetate.

When the patient went into labor she became cyanotic. Her temperature was found to be 104, pulse 130, respiration 45. There was a consolidation of the left lung. Labor was easy and no anesthetics were given. She was given 1 cc. of pituitrin after the completion of the third stage, and an ampule of digifolin. A nurse was left with the patient and sulfapyridine was started. The cyanosis deepened and the patient died six hours postpartum.

### COMMENT

Some of the members of the Committee considered

this to be a medical death, as indeed it was, but under the rules of the census office it must be classed as an obstetrical death. The pregnancy and labor, no doubt, hastened the exitus. Pneumonia and pregnancy are a bad combination, as those who practiced in the influenza epidemic of 1919 well know. If a pregnant woman with pneumonia goes into labor, the chances for her recovery are much less. Yet, the tendency is to induce labor when the patient contracts an acute infectious disease. What the reasoning is, is not clear, but there is no doubt as to the result. In the influenza epidemic the mortality, when this was done, was practically 100 per cent.

In the case under consideration, the only criticism was in the prenatal care. The patient was undernourished and had punched-out ulcers on her arms and legs. There is no record of a Wassermann test in the present pregnancy, and the record does not show that any effort was made to improve her condition of undernourishment.



## MILITARY MEDICINE

### Virginia Doctors in Service Supplement 9

This is the Ninth Supplement to the list of Virginia Doctors in Service, the original list having been published in July 1942, with Supplements in September and October 1942, January, April and September 1943, and February, June and October 1944. Names are given in alphabetical order with home addresses in view of changes in location and rank.

The MONTHLY will appreciate being advised of omissions that they may be included in a future supplement.

Dr. Robert H. Barnes, Richmond.  
Dr. George Benjamin Carter, Purcellville.  
Dr. Ashby Coleman, Jewell Valley.  
Dr. Edgar Lee Crumpacker, Williamsburg.  
Dr. Curtis Preston Gardner, Jr., Hillsville.  
Dr. Hugh Johnson Hagan, Jr., Roanoke.  
Dr. Claude Gibson Hooten, Lynchburg.  
Dr. A. W. Lewis, Jr., Aylett.

Dr. George W. Melchoir, Richmond.  
Dr. Frank F. Merker, Richmond.  
Dr. Charles Thomas Nicholson, Jr., Alexandria.  
Dr. Clyde G. O'Brien, Appomattox.  
Dr. Algerd Powell, Buena Vista.  
Dr. James W. Sinclair, Warrenton.  
Dr. Warren Taylor Vaughan, Jr., Richmond.

### Promotions in Service.

Promotions have been noted recently of the following Virginia doctors who are in Service:

#### To COLONEL—

Dr. Joseph E. Cox, Waynesboro.

#### To LIEUTENANT COLONEL—

Dr. George A. L. Kolmer, Salem.  
Dr. M. H. Todd, Norfolk.

#### To MAJOR—

Dr. John Newton Dunn, Blackstone.  
Dr. E. L. Hopewell, Strasburg.  
Dr. R. C. Manson, Richmond.

#### To CAPTAIN—

Dr. William Minor Deyerle, Richmond.  
Dr. A. M. Jacobson, Roanoke.

## WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

*President*.....MRS. PAUL C. PEARSON, Aylett  
*President-Elect*.....MRS. P. M. CHICHESTER, Abingdon  
*Recording Secretary*.....MRS. C. C. SMITH, Norfolk  
*Corresponding Secretary*.....MRS. HAWES CAMPBELL, Turpin  
*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond  
*Chairman, Press and Publicity*.....MRS. A. G. SHETTER, Richmond.

### A Doctor's View of A "Unified Social Insurance System" of Medical Practice.\*

Eric Johnston, the dynamic President of the United States Chamber of Commerce, recently published a book with the title *America Unlimited*. This book should be read by all who doubt whether America offers further opportunities for achievement or who dally with the idea that our democratic system of government suffers by comparison with any political philosophy yet devised.

I want to use a paragraph of this book as a text for what I shall have to say. For we can get a clearer idea of the merits or demerits of a socialized

system of medicine—that is, medical practice controlled by the federal government,—if we can consider the project against its background and as a part of a general program rather than as an isolated, unrelated socio-political scheme.

Eric Johnston writes:

"The age-old struggle between Authority and Liberty seems to have come to a head. In country after country the principle of Authority has triumphed; in others, particularly in America, Liberty is still in the ascendant, though harassed and on the defensive as never before in our national career. Everywhere, it would seem, the answer is being sought to the riddle whether the people own the state or the state owns the people."

The context shows that Johnston uses the word Authority in the sense of power concentrated in a strong centralized, totalitarian government, and Liberty in the opposite sense of decentralized government; or as applied to our own country, a controlled economy from Washington as against free

\*Address before the Woman's Club of Abingdon.

enterprise and individual initiative.

This cleavage of opinion is literally age-old in our country—as old as, or older than, the nation itself. As strange as it is, there were monarchists here even though the colonies had just thrown off the yoke of monarchy. At the opposite extreme there were those, even then, who hesitated to have their states join any union, fearing that any surrender of powers to the federal government would set up a superstate. Ever since, there have been Federalists and Republicans, as they were called then. Since the mountaineers of Pennsylvania challenged the right of federal government to tax its citizens for converting their gain into whiskey, the debate has gone on between those who would give more power to the central government and those who resist what they consider encroachments upon the rights of the states and of the people.

We have not time to cite specific instances. We can remind ourselves that the argument between advocates of federal and states' rights had become so bitter by 1861, and on matters so basic, that it brought on civil war. The War Between the States was fundamentally an argument over the right of the several states to order their own internal affairs, and when that right was denied them the southern states exercised their privilege of withdrawing from a partnership, the conditions of which had become intolerable. A bloody war of four years settled once for all any claim that states' rights had precedence over federal authority.

As time passed control centered at Washington extended more and more into the economic life of the nation. Theodore Roosevelt, you remember, contended that "big business" could not combine into trusts and monopolies, lest they grow powerful enough to challenge government itself. Parenthetically, one wonders whether, if Theodore Roosevelt were President today, he would wave an equally "big stick" over the labor unions—or is there no menace to government there?

Political philosophers are now extending their theories into the orbit of the individual. Their thesis is, Men are no longer able in this industrialized era to provide for the calamities of life, old age, unemployment, etc. Therefore, both employee and employer must turn over part of their earnings—enforced savings, say—that government may bring security which neither the individual, his relatives and friends, nor his local community can provide.

The next is an easy step. Not only are there underprivileged individuals, but there are backward states. Witness, they say, the sad condition of public school education in some states. Something must be done about it. So the education of children, too, must be subsidized—controlled by federal government.

And if old age, unemployment and illiteracy are the proper concerns of government, why should not provisions against the costs of sickness be included? Isn't health one of the necessities of the abundant life? Again parenthetically, food, clothing and shelter are even more immediate necessities of life, but no one has seriously advocated—at least not yet—that farmers and grocers, tailors and clothiers, landlords and realtors be corralled into some system of control, hired to feed, clothe and house any large fraction of the people.

At any rate, such is the reasoning behind the Dingell Bill introduced in the Congress January 3, 1945. This House Bill 395 replaces the Wagner-Murray-Dingell Bill pending in committee since June 3, 1943. It proposes to set up a "Unified National Social Insurance System". With the endorsement and active support of the Administration, of organized labor and of many other powerful groups, the chances of the passage of the bill seem good, to say the least, unless any opposition there may be becomes more general and better organized than appears to be the case at present.

In essence, this is a new and vast expansion of the present social security program. It is designed to embrace classes now exempt, for instance domestic employees, and to provide more complete coverage for all classes embraced within its terms. Particularly for our present discussion, it is proposed to set up a federal system of medical and hospitalization insurance benefits. This feature is Title IX of the bill, and it is with this title alone that we are dealing at this time.

This section may or may not be the most important section of the program. At least, it is a venture into a field of service with which physicians are most acquainted and about which we have felt, until now, that we were best qualified to counsel and advise. Not that the medical profession arrogates to itself all wisdom in matters of health, nor do we claim any inherent rights or vested interest. To the contrary, we admit that the very right of practice itself is a grant of privilege, and, there-

fore, the grantor has the right to determine the conditions under which the right will be conferred, or may be modified or annulled. But, so much admitted, we confidently submit the assertion that we know more than any other group about the practicalities of the service of medicine, what is liable to be good practice or bad for the American people.

Furthermore, some of us are persuaded that for the majority of practicing physicians federalized medicine may be to our distinct advantage, financially or economically speaking. To be secure "from the cradle to the grave" of our professional careers might not be such a bad thing after all.

Believe us, then, when we say that in the opinion of the great majority of practicing physicians federal control of medicine and of the medical profession is distinctly un-American and, therefore, ill adapted to the genius and the needs of our people. For this reason alone we object.

It would burden this discussion to set out in detail the medical and hospitalization provisions of this bill. Suffice it to say that it is proposed to raise by increased taxes on pay rolls, on employers and the self-employed a trust fund conservatively estimated at 12 billion dollars annually. About 3 billion dollars of this fund is to be made available to the Surgeon General of the Public Health Service. With this fund he must hire physicians, both general and specialists, to provide medical care and medicine, in and out of hospitals, for from 80 to 95 per cent, as is variously estimated, of the American people. He must also provide hospital beds, and if in his opinion they are needed he may build new hospitals, clinics or health centers. So, presumably, he will have power to shift doctors or to build hospitals, thus to hold a whip over non-cooperating personnel or institutions of any community to bring them into line. He must determine standards for the various specialties, who shall qualify as specialists, and when the patient may consult the specialist. He may subsidize undergraduate and postgraduate professional study and research. And two years after the law goes into effect he and the Social Security Board must advise the Congress how dental, nursing and other services can be provided.

Now, then, what's wrong if, guaranteed by the United States Government, one can buy insurance against the costs of medical and hospital bills for one's self and dependents at a maximum personal

cost of \$45 to \$52.50 annually?

When attempting to answer this question one is confronted with the undeniable fact that men think differently upon even the most fundamental principles. I am conscious of this handicap and that I view the question through a doctor's glasses. If, then, my view seems myopic or astigmatic, you are free to make such corrections as you think proper.

I object to this bill, first, because it is compulsory and almost universal in its application. If one is gainfully employed there is no escape from its tax provisions up to the first \$3,000 of gross earnings, whether or not one expects to use its so-called "benefits". I think I have no right to force my neighbor into a scheme which he does not want, even though I believe it is a good thing for me and my dependents. I believe church membership is a good thing. I would not if I could force every one to join my church.

It sets up another huge bureau with all of the potentialities of government by bureaucratic decree and red tape. It puts a stake of 3 billion dollars into the hands of one man—a dictator over the health, if not the lives, of some 110 million free Americans. Think of the temptation to boondoggling and chiselling, if nothing worse, with and through this immense sum to be spent each year.

But in spite of these billions the real problem of the conscientious doctor is not touched. The unemployed, the unemployable, the pauper are not provided for in any way, except as some relief agency may possibly buy participation for its clients with other tax money.

Its cost—it is estimated that some 20 per cent of the fund will be needed for administrative purposes alone—an overhead of 600 million dollars—dollars enough to hire every active physician in the United States at \$5,000 per annum. A costly venture, certainly, even if we could guarantee no waste and extravagance.

It smells from afar of politics in the ugliest sense of that term. If one needs to be reminded of how ugly this can be, a particularly flagrant case may be quoted from the words of a newspaper columnist: ". . . in February 1936, a WPA administrative assistant in West Virginia wrote to one of his county administrators: 'I hand you herewith a list of the doctors in Ohio County. Kindly separate Democrats from Republicans and list them in order of priority so that we may notify our safety foremen and com-



pensation men as to who is eligible to participate in case of injury.' " (Lawrence Sullivan, *The Drive for Socialized Medicine*, Nashville Banner). Accordingly, Democrats were listed in the left hand column, Republicans in the right!

From the moment the physician signs up under this law he may forget medicine. From then on his professional success and fortune are in the hands of the politician who appoints him and who promotes him. In turn, patients are limited in their choice of physicians to these panel doctors: that is, if they are to realize the "benefits" of their tax payments. Neither can they change doctors nor consult specialists except under the rules laid down for them.

The level and the spread of service for some of the people may be, probably will be, improved, but for most it must mean a levelling down from the present high standards, the highest in the world. The incentive to good work on the part of the doctor is gone. He can earn only so much—about the wages of a skilled mechanic. Why should he work or worry himself over the fate of his patient, so long as he is protected by his political boss, any more than the union laborer who is in the good graces of his labor boss. State medicine—political control of medical service—always has meant, always will mean, for the mass of the people medical care by physicians who are politically amenable and are so selected rather than for professional skill and ability. Or else the people will be served by physicians who prefer to be servants on wages—hired men—rather than to risk their fortunes in a competitive field in a free world.

In either event the medical profession will have been unionized, willy-nilly, and, of course, at the same time you would confer upon the profession all of the prerogatives of union men, including the right to strike. What a paradox! Just a few years ago the present administration prosecuted and won through the Supreme Court of the United States a suit against medical societies for operating, as it were, a "closed shop" in "restraint of trade". Now, the same administration would force us into a union of its own devising which we must join or else—  
• But we don't want such control. The rank and file of the medical profession of America is proud of its achievements and jealous of its part in our civilization. We are anxious to maintain our freedom of action. Ours is the only country on earth

where the great company of physicians is—I was about to say free, but we are too much the servants of our patients and of our consciences to be free. At least, we are not the servants of government. Germany under Bismarck began her experiments in state medicine sixty or more years ago. It is one of the institutions of old Germany which Hitler approved of. He should have liked it: he stole all of the accumulated funds for his own purposes. Now, German doctors slave as and where they are ordered, with or without pay.

What gain there may be from a program of government controlled and administered medical care is obvious. Undoubtedly, there is room for improvement, especially in the distribution of services. Good and complete service is and always will be costly whether the individual or the government pays the bill. But this and other demerits and shortcomings of traditional practice can gradually be alleviated by the wide adoption of voluntary hospital insurance and of other plans now under intensive study and experimentation by both the medical profession, hospital associations and state agencies. For instance, a study of the problems of rural medical care in Virginia is now underway by a legislative committee composed of legislators, physicians, and other informed and interested individuals.

It is not so easy to show the menace of so-called state medicine, but it is there and is all the more sinister because it is hid under a cloak of humanitarianism. If medical care of the sick—that most intimate, personal, individualized and confidential of all services—is ever regimented under governmental decree and control, not only have we brought medical service down to a drab level, but we have taken the most decisive step possible to conceive of toward taking over, by the same process, all professions, all industry, all enterprise of every sort. And that will be socialism or some other form of totalitarianism.

A few weeks ago the New York Times addressed one of its leading editorials to the assertion by an Englishman that after this War world socialism is inevitable. In the course of his remarks, the editor makes this comment: ". . . It would be bitterly ironic if the unparalleled sacrifice of blood and treasure that the United Nations have made to defeat German National Socialism should result merely in the world's taking over substantially the same system. It would mean that in a moral, eco-

conomic and political sense the vanquished had been in the end the victors. . . ."

This, then, is the issue shortly to be faced by the American Congress for and in behalf of our people. Granting if only for the sake of argument that the entire social program as enacted to date was designed to correct abuses growing out of our democratic system, and has been amply justified in its operation and effect, just how far shall we follow this course of national socialism? Where should we stop? Is it possible that we can pay too dearly for this unified or collectivist type of "security"? People can be pampered and spoiled by depending too much upon a Great White Father In Washington, just as do children who expect too much of Santa Claus. I remind you that never was a people more secure than the slaves of the southern planter. Never were people more insecure than the pioneers of Jamestown and Plymouth Rock, unless it were the founding fathers who rebelled against the mother country because they were too much governed from London. Independence won, they proceeded to establish this, "the land of the free and the home of the brave".

In parliamentary law some motions are ruled debatable, others non-debatable. Sometimes I wonder whether any question is solved satisfactorily to all parties concerned by argument. Man, like woman, convinced against his will is of the same opinion still. Just as our church connections or political affiliations may be accidents of birth, so our attitude toward social problems may depend upon which side of the tracks we were born or live on.

Even if we can eliminate prejudice in our consideration of the present problem of what is the best medical-service plan for the great mass of the people, the decision will be reached largely uninfluenced by argument. We feel about some things almost instinctively, deep down, and here we are conscious of a balancing of two conflicting emotions—a desire to be secure against the vicissitudes of life, yes, but not at too great a price, not at the sacrifice of freedom to choose our own paths within reasonable limits, even at some risk. Some of us sometimes prefer to bid and play our hands "on a hunch", regardless of precedents, orthodox procedure, and the risk. So the framers of the Constitution of our Republic "played a hunch" when, regardless of all old forms of government, they strictly

limited by definition the authority of the central government, reserving to the states and to the people themselves all powers not specifically taken from them.

Some such thought must have been in the mind of Winston Churchill when he said—

"We must beware of trying to build a society in which nobody counts for anything except a politician or an official, a society where enterprise gains no reward, and thrift no privileges."

F. H. SMITH, M.D.,  
*Abingdon, Virginia.*

### BOOK ANNOUNCEMENTS

**American Medical Practice in the Perspectives of a Century.** By BERNHARD J. STERN, Ph.D., Lecturer in Sociology, Columbia University; Visiting Professor of Sociology, Yale University. New York. The Commonwealth Fund. 1945. ix-156 pages. Cloth. Price \$1.50.

This is the first of a series of monographic studies published under the auspices of the New York Academy of Medicine's Committee on Medicine and the Changing Order. The author lectures on sociology at Columbia University and is a visiting professor of sociology at Yale University. The present monograph is an attempt to give in 139 pages the "story of the reciprocal interplay between social, technological, and economic forces and medicine." Dr. Stern begins with a description of the social and economic changes in American life since the early nineteenth century, and in successive chapters he paints the expanding horizons of medicine—the effects which the growth of machine production, industrial urbanization, and economic concentration have had on the health of the people. Side by side he undertakes to portray the progress of medicine as a science, the mounting costliness of its services, the colossus of medical education, the growth of specialization, the vastness of our modern hospital system as well as the unequal distribution of medical service.

Dr. Stern has managed to compress in a few pages an astonishing amount of material which should be of interest to every doctor as well as to the socially minded citizen. If the other monographs portray as well the framework for an understanding of our present medical problems, the New York Academy will have rendered to the citizens of this country an invaluable service.

W. B. B.

# VIRGINIA MEDICAL MONTHLY

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## A Plan for Hospitalization of Indigent Maternity and Infant Patients With Complications

THE organization of Maternal and Child Health Clinics for indigent maternity and infant cases was begun in Virginia in 1936 through the Bureau of Maternal and Child Health of the Virginia State Department of Health. In the next few years a considerable number of these clinics were established in those rural areas having county health departments. Local practicing physicians were the clinicians. The continued operation of these clinics focused attention upon an urgent need for some method to be put into force whereby indigent patients attending these clinics could be hospitalized when such procedure was considered imperative. Local funds for this purpose were found to be either lacking or entirely inadequate. The Director of the Bureau of Maternal and Child Health discussed this matter in detail with the Committee on Maternal Health of the Medical Society of Virginia and arrangements were made whereby an experimental hospitalization plan was put into effect in one rural county on November 1, 1941. The cost of the undertaking was financed by matched state and federal funds. Both the Maternal Health Committee and the State Department of Health felt it advisable to try this experiment in a limited area without undue publicity. Under this plan, hospitalization was made available to indigent mothers and babies referred from official maternal and child health clinics. Provision was made also to include emergency indigent maternity patients or infants that were referred by the family physician through the county health department. Hospitalization was provided solely for medical indications; not for social or economic reasons alone. Midwife cases requiring emergency hospitalization were screened through the clinics with the approval of the physician in charge.

This experimental plan proved so successful that the Maternal Health Committee recommended to the State Department of Health that an extension of the activity be



made in July 1942 to include all areas of the state served by official county health departments. Further expansion was made later to include all rural areas of the state. All areas of the state are now under this plan except the larger cities with independent health departments. Fifty-one hospitals are now participating. These hospitals are geographically situated so that all sections of the state are accessible. The hospitals are paid the actual cost of ward hospital service. No payment is provided for the physicians. This plan is entirely separate from and should not be confused with the federal Emergency Maternity and Infant Care Program for wives and infants of enlisted men.

The principles of this arrangement are simple and fundamentally sound. The plan offers a method to provide for those indigent patients unable to obtain necessary hospitalization. Some of these patients probably were previously a burden upon hospitals that furnished them care notwithstanding the financial loss. It is believed that a large percentage of patients cared for under this plan would not have received needed hospitalization because of lack of an *organized* plan to provide this service. It is reasonable to believe that the operation of this plan is favorably affecting maternal and infant mortality. A noteworthy feature has been the provision whereby the physician, with information relative to the patient and the family, has been able to voice his opinion of the eligibility of the patient for care at public expense. Physicians using this plan have not imposed upon it. On the contrary, it may well be stated that physicians referring these patients have used unusually sound judgment in their selection of cases. The development and efficient administration of this demonstration plan has reflected credit upon the Bureau of Maternal and Child Health of the State Department of Health. The performance of the physicians participating in the program has demonstrated the willingness of the medical profession to do its part for those whom they sincerely believe to be in need of and unable to pay for necessary hospitalization.

During the thirty months the plan has been in operation, 1621 patients have been hospitalized. Of these, 1027 were maternity patients; 594 were infants. All of these were patients urgently in need of hospitalization on account of serious complications. The total cost of hospitalization has not been excessive. Virginia is the only state, so far as is known, with a plan of this type in operation. Even though one-half of the entire cost has been through the use of federal funds there is considerable satisfaction in knowing that the plan originated within this state to meet our own problems. Further experience may indicate it to be a part of the answer for a more complete program for necessary hospitalization of indigents through public funds.

C. J. A.

### A National Maternity Service for England and Wales

AT the request of the Royal College of Obstetricians and Gynecologists a committee of well known English obstetricians has brought in a forty-two-page report entitled *Report on a National Maternity Service*. This report is reviewed by Dr. Nicholson J. Eastman in the February number of *The American Journal of Obstetrics and Gynecology*. The first part of the report describes the present service and its shortcomings. The second part presents a nation-wide plan for conserving

what the committee considers the chief national asset, the babies and the mothers who produce them.

The present service has grown up in a haphazard manner and has resulted in an uneven system of distribution of both obstetric personnel and first rate maternity institutions and equipment. Although the maternal mortality has fallen from 4.49 per 1,000 live births in 1931-35 to 2.54 in 1942, the committee believes that this has been due to the application of new methods and drugs in the treatment of shock, hemorrhage and sepsis rather than to any improvement in the standard of obstetric practice. The more prevalent use of blood and plasma transfusion, the employment of sulphonamides, the prevention of droplet infection by the use of face masks, the control of infection by modern barrier nursing, and the lowering of infections in hospitals by bacteriologically controlled administration and discipline, are specifically mentioned. The great difference in maternal mortality rates in the various parts of England, is explained by the committee by the variation in the obstetric personnel and resources.

Likewise the frequency of stillbirths, neonatal deaths and premature births are found to be higher than they should be. The accommodations for the newborn, even in the newer maternity hospitals, are usually inadequate. While the problem of maternal and newborn infant care is essentially a medical one, the committee thinks that social and economic considerations play a part. As the social and economic order is descended from the higher ranks of business and professional men to unskilled laborers, the maternal mortality rates in any given age group show a definite rise. Adverse social and economic conditions materially reduce the chances of a child being born alive, or if born alive of surviving a month. The importance of a high standard of family life is urged in the belief that the infusing of higher moral and spiritual values into the families of a country has a profound bearing on physical and mental health. The committee pleads in particular for early marriage. Apart from the advantage of early marriage in relation to sexual morality and apart from its possible bearing on population problems, early marriage has a direct bearing on the health of mother and child. While the risks associated with childbirth at a later age can always be minimized by skilful care, nevertheless, over large groups, they do attain statistical significance.

The committee suggests dividing the country into areas of approximately a million population so that each area would yield about 15,000 births a year. In each area there would be a key or primary center, divisional or secondary centers and local or peripheral centers. The key center, whenever possible, would be connected with a medical school and its director would be the Professor of Obstetrics and Gynecology. He would have direction not only of the key center but of the whole area. Such a center would have 100 or more lying-in beds with an appropriate number of antenatal and isolation beds, a department for infants, ambulance and emergency services, antenatal and postnatal clinics, laboratories, classrooms and library. There would be an associated gynecological unit with provision for the treatment of abortions. The director should be provided with a house in the hospital precincts. With him would be associated a staff of specialists, assistants of various grades, house surgeons, midwives and nurses.

The divisional or secondary centers would be in large towns or in small towns in rural areas. Their equipment and staff would be like that of the key center. They would provide consultant services both obstetric and pediatric for general practitioners.

The local or peripheral centers would be small units in country towns and villages. They would be in charge of selected general practitioners in the district and would have a resident staff of nurse-midwives. They would have their own antenatal clinics, and would provide beds for women who wish to have institutional confinements, and for emergency cases for whom a more distant journey would be dangerous. They would be the centers for the district midwives and the public health nurses.

Delivery of women in their own homes is approved under three conditions: 1. They shall have had excellent prenatal care up to the very end of pregnancy. 2. All primiparae, all women who have had six or more children, all whose labors are likely to be abnormal, and all whose home conditions are unsuitable are excluded. 3. Home deliveries should be supported by obstetric consultants and maternity institutions. Every antenatal clinic should be linked to a maternity center with a sufficient number of antenatal beds. Midwives should not be regarded as competent to undertake unaided the antenatal care, but should always work in collaboration with the general practitioner or obstetrician of the clinic. It should be remembered that in Britain the midwife is a different sort of person from the midwife in Virginia. She has had a year's training in obstetrics if she is a graduate nurse, and two years' training if she is not a graduate nurse. She is present at 90 per cent of the confinements and in three-quarters of these she acts as an independent practitioner with full responsibility.

It is recommended that the whole service should act as a single unit, with all parts integrated—maternity centers, antenatal and other clinics, obstetricians, pediatricians, general practitioners, midwives, public health nurses, etc. It is assumed that the Minister of Health, together with competent advisors, would control such a maternity and infant health service and that it would be a part of the general health service of the country. A brand new idea in the service is the postnatal hostels. Here the mother and her new baby could go for a period of recuperation or rehabilitation. It would give her an opportunity to get used to her new worries and responsibilities, under guidance. Two or more weeks in a postnatal hostel would make all the difference to the health and happiness of mother and baby.

To one who has heard many of the committee talk when on visits to the United States, it seems strange to hear them recommending in such strong terms institutional obstetrics. The committee cites convincing statistics to the effect that modern institutional obstetrics can be made remarkably safe. During the war the Ministry of Health has brought about an increase of 3,000 maternity beds in England and Wales, so that now there is maternity accommodation in institutions for at least 50 per cent of the mothers. But the committee is firm in its belief that this is not enough. It recommends providing, to begin with, for 70 per cent of all births.

The plan is a very pretty one, on paper. It should work fine, but for one fact, and that is human nature, and human nature, especially obstetric human nature, is peculiar. Obstetric catastrophies have a way of happening when they are least expected. When they come, all the consultation service in the world is of no avail. A chain is no stronger than its weakest link, and this is a mighty long chain. In our opinion the chief value of the plan lies in its educational possibilities. From reviewing maternal deaths over a period of years, we have gained the impression that the commonest fault has been a lack of interest in obstetrics on the part of both the patient and the accoucheur.



## William Henry Howell

1860-1945

THE death of Dr. William H. Howell on February 6th brought regrets to his many students scattered all over the world. Dr. Howell was the last survivor of the original Johns Hopkins medical faculty. Abel, Mall, Welch, Williams, Kelly, Halsted, Hurd, and Osler are all gone. We do not know that a medical school is needed in Heaven, but they certainly have a group of great teachers.

Dr. Howell was strictly a Baltimore product. He was born in Baltimore in 1860, received his A.B. at Hopkins in 1881 and his Ph.D. there in 1884. Except for three years when he was professor of physiology and histology at the University of Michigan and one year when he was associate professor of physiology at Harvard, he was connected with Johns Hopkins all his life. He was professor of physiology in the University before the Medical School was started and after that he taught in both the University and the Medical School. When the School of Hygiene and Public Health was started in 1917 he was assistant director and in 1926 he became director. He has been emeritus since 1931.

At one time, Dr. Howell was editor of the *American Journal of Physiology* and in 1920, he, with Dr. W. H. Welch, founded the *American Journal of Hygiene*. His investigations of the circulation, the origin of the red blood cells, of the coagulation of the blood and the origin of the blood platelets are well known. He also participated in the discovery of heparin. He was president of the thirteenth International Physiological Congress. In 1932-33 he was chairman of the medical section of the National Research Council, and was one of the first members to be named to the National Advisory Health Council. He was a member of the National Academy of Sciences, the American Philosophical Society, the Society for Experimental Biology and Medicine, and the American Physiological Society. He was an honorary member of the English Physiological Society.

When we went to Hopkins in 1900, after a year at the Medical College of Virginia, Dr. Howell was dean of the Medical School. The question of the advisability of entering the second year class came up. He was of the opinion that we could do all right in the advanced class, but referred us to Dr. Mall. Mall thought we should make a fresh start with the first year men. He sent us back to the dean with that recommendation, and so we went back and forth from the physiological building to the anatomical building all one afternoon. In the end Dr. Howell had his way, as he usually did. He was a great executive, but did not seem like one. He was never in a hurry and had unlimited patience. We never heard him raise his voice. Most of the time he had the kindest little twinkle in his eyes suggesting that life was mildly amusing to him. His lectures and demonstrations before the class were the acme of perfection. Everything was perfectly timed. At just the right moment the anesthetized animal, all opened up to show what the professor was talking about, would be wheeled in by Percy Dawson or by Erlanger. Dr. Howell gave no directions that we could detect, but the animal did just what he said he would do whether it was acceleration or slowing of the heart, increased gastric motility, increased urinary output or what not. It was almost as if the animal were hypnotized by Dr. Howell's perfect diction and well modulated voice. He certainly hypnotized the students.

## Societies

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### The Wise County Medical Society

Held its annual banquet meeting on February 23 at Hotel Norton in Norton, with twenty-one of its twenty-nine members present. Peptic ulcer was the topic and Wyeth's movie on the subject was shown by special machine. Prepaid medical care was discussed at length and a committee was named to present recommendations for action at a called meeting of the Society in March.

Officers elected for the ensuing year are: President, Dr. C. L. Harshbarger, Norton; vice-presidents, Dr. J. D. Culbertson of Coeburn, Dr. R. W. Holley of Appalachia, and Dr. E. P. Cox of Norton; secretary-treasurer, Dr. Thos. J. Tudor of Norton. The Board of Censors is composed of Dr. C. L. Harshbarger, chairman, and Drs. S. H. Rivers and F. S. Givens.

### Richmond Academy of Medicine.

The Section on the History of Medicine sponsored the meeting of the Academy on March 13, at which time Dr. M. Pierce Rucker gave an address on "Leaves from a Bibliotheca Obstetrica". Dr. Rucker has done considerable research in the Miller Library of the Academy, and has been invited at various times to speak to other groups of the interesting values of this library. Following the address, there was an informal reception in the Academy dining room. Wives of members were invited to this meeting.

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The program on March 27 was presented by guests from the Bowman Gray School of Medicine,

Winston-Salem, North Carolina. Dr. George T. Harrell, associate professor of preventive medicine, spoke on "A New Approach to Basic Supportive Therapy in Rocky Mountain Spotted Fever", and Dr. Robert P. Morehead, associate professor of pathology and director of the department, on "Intravenous Alimentation with Special Reference to the Amino-Acids".

### Norfolk County Medical Society.

At the meeting of this Society on March 19, the following program was presented:

Principles of the Treatment of Syphilis—Harry Pariser, Surgeon (R), USPHS, V.D. Control Officer of Norfolk;

Rapid Treatment Methods in Venereal Diseases—Earl White, Surgeon, USPHS, Director Hampton Roads Medical Center;

Discussion of Venereal Disease Control—Julian L. Rawls, M.D., Norfolk.

Dr. Claiborne Willcox and Dr. Lockburn Scott are president and secretary, respectively, and Dr. Raymond Kimbrough was chairman for this meeting.

### Roanoke Academy of Medicine.

At the March meeting, the following scientific program was presented: Recent Developments in the Surgical Treatment of Certain Gastro-Intestinal Disorders by Dr. Keith S. Grimson, Department of Surgery, Duke University; and Sterility by Dr. E. C. Hamblen, Department of Obstetrics, and Gynecology, Duke University.

Dr. L. D. Keyser is President of the Academy and Dr. D. S. Garner secretary.

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## News

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### Please Note!

We have been compelled to reduce the number of reading pages in this issue in order to comply with the government's restrictions with regard to the use of paper. We are endeavoring to secure a lighter weight paper with the hope of resuming the regular number of reading pages in the near future.

### McGuire General Hospital to be Enlarged.

In accordance with the Surgeon General's new authorization for 2,565 beds, McGuire General, Richmond, will be the largest general hospital in the Virginia, Maryland, Pennsylvania area. It will no longer serve as an evacuation center but will render definitive treatment to all patients trans-

ferred to it from other evacuation hospitals, and will function as a neuro-surgery center, with some of its 2,565 beds available for neurology cases.

The expansion has necessitated the construction of 25 new buildings which will house the increased enlisted detachment. The old detachment barracks are being converted to wards, each building being of the same general design as the present single story hospital wards. The increased bed capacity requires the conversion of the first floors of all five (5) three-story buildings. In the past these areas were used for office space, lecture rooms, etc. Complete ward facilities for approximately three hundred (300) men will be installed in these premises.

#### **News from the University of Virginia, Department of Medicine.**

At the meeting of the University of Virginia Medical Society on Monday, February 12, a motion picture on loan from the Army Medical Museum as a restricted film was shown. The film showed activities of the Eighth Evacuation Hospital in Italy.

On Friday, March 9, the University of Virginia chapter of Alpha Omega Alpha had its initiation of new members. Colonel John B. Youmans, Director of the Nutrition Division of the Medical Corps of the United States Army, spoke on the subject "Principles Underlying the Early Diagnosis of Nutritional Deficiency Disease."

Dr. Vincent W. Archer, Professor of Roentgenology, spoke before the Forsythe County Medical Society in Winston-Salem, North Carolina, on Tuesday, March 13. His subject was "Lesions of Gastro-Intestinal Tract Other Than Cancer and Ulcer."

#### **Prisoner of War.**

Lt. Joshua P. Sutherland, MC., AUS., who was previously reported as "Missing" is a prisoner of war in Germany. He is a son of Dr. and Mrs. T. C. Sutherland of Haysi and is a graduate in medicine from the University of Virginia in March 1943.

#### **Married.**

Dr. Frank Wilson Gearing, Jr., Woodstock, and Miss Mary Elizabeth Coleman, Boykins, February 24. He is a graduate of the Medical College of Virginia in September 1944.

Dr. Benjamin Franklin Montague, Jr., Charleston, W. Va., and Miss Mary Louise Aylor, Chatham, March 3. He is a graduate in medicine from the University of Virginia, class of September 1944.

#### **Another Meeting Postponed.**

The American College of Chest Physicians announces the cancellation of its annual meeting which had been scheduled to be held in Philadelphia, June 16-19. However the Board of Regents will meet in Chicago in June to transact any business matters of the College.

#### **Not Canceled.**

The art contest sponsored by Mead Johnson & Company on the subject of "Courage and Devotion Beyond the Call of Duty" (on the part of physicians) has *not* been canceled or postponed.

The closing date remains May 27, 1946.

There will be no annual exhibit *this year* of the American Physicians Art Association, due to the cancellation of the American Medical Association meeting which had been scheduled to take place in Philadelphia, June 18-22, 1945.

For full details regarding the \$34,000 prizes and the "Courage and Devotion" contest, write Dr. Francis H. Redewill, Secretary, A.P.A. Association, Flood Building, San Francisco, California, or Mead Johnson & Company, Evansville, Indiana.

#### **Clothing Collection in April.**

The active cooperation is asked of all Americans—men and women—in the National Clothing Collection during April. This drive is conducted in behalf of more than fifty voluntary war relief agencies and United Nations Relief and Rehabilitation Administration (UNRRA).

In Europe alone, 125,000,000 men, women and children are in desperate need of clothing, shoes and bedding. Every one is urged to contribute to this drive, by going through attics, closets and trunks and donating garments not in use. Such materials will help these stricken war sufferers to help themselves toward their own re-establishment and, in turn, help us in creating the peaceful world of the future.

Get ready for the drive!

#### **Need Now Is for 16,000 Nurses.**

The Army needs 16,000 additional nurses immediately in order to care adequately for wounded and sick American soldiers, according to Major General George F. Lull, Deputy Surgeon General.

With the flood of new patients from overseas, the authorized ceiling for the Corps was recently raised from 50,000 to 60,000. At present it numbers only



44,000 and about 250 nurses a month are separated from the Army for various reasons. About 71 per cent are overseas, some having been in foreign theaters for several years. Incidentally, a more effective rotation plan for these overworked nurses will be possible when the full quota of 60,000 is reached.

#### **Nestle's Milk Products, Inc.,**

Announces that Dr. James T. Lowe has been appointed Director of Nutritional Research for the company, and will make his headquarters in New York City. He comes from the Wisconsin Alumni Research Foundation with which he has been associated for the past ten years in the capacity of technical counsel and special field representative. His research activities have related principally to the subject of nutrition and vitamin D, in which fields he has published a number of papers.

#### **The Chest Clinic, Richmond Department Public Health,**

Which operated at 411 North Eleventh Street, this city, until it was burnt out early in the year, is opening offices on April 3, at 308 North Twelfth Street. As the clinic is owned and operated by the city, its service is necessarily limited to the citizens of Richmond.

#### **Dr. Charles Frederick Williams,**

For many years superintendent of the State Hospital at Columbia, S. C., has retired from that position to become Director of Research of the Hospital. He is succeeded in the superintendency by Dr. Coyt Ham who has been for several years a member of the Medical Staff of the Hospital.

#### **Exhibition of Advertising Art.**

With paintings occupying four of the three hundred places set aside in the "human interest" group, at the 24th Annual Exhibition of Advertising Art, to be held in New York from April 10 to 29, inclusive, Wyeth Incorporated, of Philadelphia, has again scored heavily with the experts. Each of these paintings dramatically emphasizes the Wyeth message to consumers: "Save your doctor's time in wartime."

"But it's my last night, Dad—can't another doctor go?" is the G. I.'s appeal in one of this series, which, in addition to recognition by the Art Director's Club, has been chosen for inclusion in the hundred outstanding advertisements to receive Wartime Advertising Awards.

#### **For Sale.**

Laboratory rabbits. We can handle large or small orders and have a constant supply. Contact us for your needs. Bonnie Brae Rabbitry, Route 12, Richmond, Virginia. Dial 5-2421. (*Adv.*)

#### **For Sale.**

Rose Cold-Quartz Ultraviolet Lamp with oral attachment; also Rose short wave diathermy machine (portable). Both in perfect condition. Address: W. M. Bowman, Major, MC., 101 Liberty Street, Petersburg, Virginia. (*Adv.*)

#### **Wanted.**

Full-time position or attractive location desired by highly trained EENT diplomate. Experienced refractionist and audiometrist. Over military age. Excellent medical credentials. Address EENT, care the MONTHLY. (*Adv.*)

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## Obituaries

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#### **Dr. Joseph Frasia Jones,**

Well-known Richmond physician, died March 11. He was born in Mecklenburg County in 1877 and graduated from the Medical College of Virginia in 1906. He was formerly assistant surgeon for the Seaboard Air Line Railway. Dr. Jones was a great lover of outdoor sports and was said to be one of the best horsemen in this section of Virginia, and was an active member of the Virginia Fox Hunter's Association. Dr. Jones had been a member of the Medical Society of Virginia for thirty-seven years. His wife and two children survive him.

#### **Dr. George W. Young,**

For more than thirty years a practicing physician at Pennington Gap, died there on March 2, aged seventy years. He studied medicine at the Hospital College of Medicine, Louisville, Ky., from which he graduated in 1898, and was for some years a member of the Medical Society of Virginia. Dr. Young is survived by a son and three daughters.

● Yes . . . and in Paterson, Portland, Pittsburgh and Pocatello . . . for this new antibiotic is now being distributed through the same channels which make other Parke-Davis prescription products available to the physicians and pharmacists of the country. In the short space of five years Penicillin has developed from a mold on a petri dish in a London laboratory to a package on the shelves of the prescription rooms of fifty odd thousand retail pharmacies throughout the United States.

● To the triumphs of Fleming and Florey must be added the genius of American pharmaceutical production which rapidly developed the means and methods of mass manufacture in sufficient quantity to meet first, the needs of the armed forces; next, the demands of critical civilian cases; then, to supply limited quantities to selected hospitals throughout the country, and finally to release Penicillin for general distribution.

● Physicians may now prescribe . . . and pharmacists dispense . . .

# PENICILLIN

PARKE-DAVIS

*Parke, Davis & Company*

DETROIT 32, MICHIGAN

# \$34,000.00 IN WAR BONDS AS PRIZES

## For the best art works memorializing the medical profession's *"Courage and Devotion Beyond the Call of Duty"*

(In War and in Peace)

### 42 PRIZES

[ 21 OF THE 42 PRIZES ARE RESERVED FOR MEDICAL OFFICERS OF THE ARMED FORCES. THE OTHER 21 PRIZES ARE FOR CIVILIAN PHYSICIANS ]

The American Physicians Art Association, through the cooperation of Mead Johnson & Company, announces the following Prize Contest:

1. **SUBJECT:** "Courage and Devotion Beyond the Call of Duty" — on the part of members of the medical profession — in military or civilian practice. Any contestant may portray either the military or civilian aspect of the subject (or both, if shown in one piece).
2. **MEDIA:** The physician-artist's choice of one of the following:

- |  |                                      |
|--|--------------------------------------|
| 1. PAINTING in oil or egg tempera.       | lithography, wood block and linoleum |
| 2. WATER COLOR, transparent or opaque.   | block (on paper or cloth).           |
| 3. SCULPTURE in any medium.              | 6. PHOTOGRAPHY, including bromoil,   |
| 4. DRAWING in any medium.                | tinted and kodachrome, as well as    |
| 5. PRINTS, including etching, engraving, | photo-montage.                       |

**SUGGESTIONS: COMPLETE SKETCHES FOR MURAL DECORATIONS:** In oil, egg tempera or water color drawing; **PHOTO MURAL; BAS RELIEF SCULPTURE:** are all eligible.)

3. **ELIGIBILITY** — See Footnote ★

4. **DEFINITION** — See Footnote ★

5. **PRIZES:** Forty-two prizes, divided amongst the two groups of physicians:

To medical officers:

- 1 \$2,000 War Bond (E or F series)
- 10 \$1,000 War Bonds (E or F series)
- 10 \$ 500 War Bonds (E or F series)

To civilian physicians:

- 1 \$2,000 War Bond (E or F series)
- 10 \$1,000 War Bonds (E or F series)
- 10 \$ 500 War Bonds (E or F series)

No physician may submit more than one piece nor win more than one of the 42 prizes. No physician is eligible for a prize unless he also submits for exhibition at either the 1945 or the 1946 annual exhibition of the A.P.A.A. at least one other original work (not previously exhibited at an A.P.A.A. Exhibition) in any medium, on any subject of his own choice. Prizes will be awarded on a basis of conception and execution, irrespective of medium employed.

6. **JUDGES** — See Footnote ★

7. **EXPIRATION DATE** — See Footnote ★

8. **PURPOSE OF THE COMPETITION:** To memorialize the heroism and devotion of the medical profession in war and peace. All exhibitors (including prize-winners) shall retain ownership of their pieces. It is understood, however, that the A.P.A.A. shall have reproduction rights and also the privilege, for a period of three years after the close of the contest, of displaying prize-winning objects, at art museums, libraries, county medical societies, medical schools, hospitals, and similar institutions for the purpose of enhancing the public's estimate of the medical profession. The Association shall also have the right to offer institutions such as those mentioned above, the privilege of copying any of the prize-winning objects for use as murals, corner-stones, friezes, architectural designs, etc. — for the purpose of memorializing the medical profession's importance in war and in peace.

★ **FURTHER INFORMATION** available on request of the Association's Secretary, Dr. F. H. Redewill, Flood Bldg., San Francisco, Cal., or Mead Johnson & Co., Evansville 21, Ind., U.S.A.



# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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*May 1945*

# The *Effectiveness* of ANTISYPHILITIC THERAPY

**depends**

not on disappearance of  
spirochetes alone



**nor merely**

the reversal of positive  
Wassermann reaction



**but on**

whether the treatment is such that within  
the shortest possible time the patient  
receives maximum protection against  
relapse and the infection of others.



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## *Guest Editorial*

### Adoption and the Adoptive Placement of Children

**A**Doption is the establishment of the relation of parent and child between persons not so related by nature. Stated otherwise adoption is the legal process by which the law permits the taking of a child not related by nature into a family as an heir and legal child.

Adoptive placement is the social process whereby children are placed in foster homes with a view to eventual legal adoption.

Adoption as a legal process belongs in the area of the practice of law; and is the function of the attorney. Adoptive placement being a social process belongs in the area of the social agency and is the function of the social worker. Prenatal care to the mother; the delivery of the child; medical care to the child and guidance to the social worker in the evaluation of the physical development of the child and prediction as to the future of such development being a medical process, belongs in the area of practice of medicine and to the physician.

Adoption and adoptive placements in Virginia are governed by three statutes all of which in their present form were enacted by the General Assembly of 1942 following a report by the Virginia Advisory Legislative Council on Child Welfare, and are briefly summarized as follows:

The adoption Statute, section 5333-a to 1, of the Virginia Code permits the adoption of children by adult residents of Virginia upon petition to the court having equity jurisdiction in the city or county where the adopting parents reside. Consent as specifically provided must accompany the petition. A copy of the petition is sent to the State Welfare Department which makes a social study of the situation and forwards a confidential report to the court. The court may then enter an interlocutory order which gives the adopting parents the right to the custody of the child for the following probationary period of one year, during which the Commissioner of Public Welfare must cause the child to be visited at least once in each three months' period and then make an additional report and recommendation to the court. In instances where the child to be adopted is the legal child of one of the adopting parents, or if the child has been placed in the home of the petitioners by a child placing agency which certifies that the child has lived in the home for a year and has been visited once in each three months of that year, the court may omit the interlocutory order and the year's probationary period. Except in these two instances the final order may not be entered until one year following the entry of the interlocutory order. The final order deprives the own parents of all rights as such, and frees the child from all legal obligations with respect to his natural parents. It makes the child, in all respects, as if born to the adoptive parents with consequent rights of inheritance, education and support, and in



turn imposes upon him all the obligations of a child toward his parents. With the expiration of two years after the final order, its validity may not be attacked by reason of any irregularity in the proceedings; but the adoption may be annulled by the same court in which the proceedings were had, upon a finding that such action is for the best interest of the child.

The statute regulating adoptive placements, Chapter 227 of the Acts of 1942, makes it a misdemeanor, punishable by fine of not more than \$100.00 or by imprisonment for not more than one year, or both, for any one to operate or act as a child placing agency without an annual license from the Commissioner of Public Welfare. A child placing agency is defined as "Any person, who places, or obtains the placement of, or who negotiates or acts as intermediary for the placement of, any child in a foster home." Parents or guardians of the child and public officials are specifically excepted. Another statute, Chapter 105 of the Acts of 1922 as amended by the 1942 session provides that city and county welfare departments, acting under the supervision of the State Department of Public Welfare, are child placing agencies which need not be licensed.

Clearly it is not the intention of these three statutes to make adoptions or adoptive placements unnecessarily difficult; but rather to surround the process with adequate measures of protection to the child, to adopting families, and to the State.

That there is a considerable volume of adoptions in the courts of Virginia is evidenced by the fact that during the first two years of the operation of the present Adoption Act, 1,231 petitions were received by the State Welfare Department. This is an average of slightly more than 51 petitions per month; but in October of 1944 the Department received 98 petitions. It is known that the majority of the petitions seek the adoption of step children and near relatives by self-sufficient families who have no need of help from social agencies. For the balance of the adoptions the services of a careful and experienced case work agency is clearly necessary if the child, the family and the State are to have adequate protection. There are many more childless couples who wish to adopt children than there are suitable children available for adoptive placement. The largest child placing agency in Virginia and one of the largest on the Eastern Seaboard of the United States is the Children's Home Society of Virginia. During 1944 this agency accepted 121 new children of whom approximately 105 will eventually be available and prove suitable for adoptive placement. During the same year 530 families applied seeking to adopt a child. It is clearly evident that there is ample opportunity for a black-market in babies and for unauthorized and ill-advised placements.

The work of a careful agency which places children for adoption may be briefly summarized as including: a careful study of the family background and circumstances of each child and his need for care away from his own family; the acceptance of the child in such a way that undue pressure is not placed upon parents, temporarily unable to provide for their children, forcing them to give up the custody of their child in order that he may have the necessities of life; the acceptance of permanent responsibility for the child only after proper proceedings in the Juvenile and Domestic Relations Court and commitment of the child by the court to the agency; a period of observation and preparation of the child in a temporary family home, known generally as a boarding home, during which time the child has the advantages of living with a family and the agency has the benefit of the skilled observation of a successful mother in helping to understand the child; the use of the skilled pediatrician in preventing disease, curing illness, guarding his physical development and predicting his probable

future physical characteristics; the intelligent use of the clinical psychologist who charts the rate of mental growth of the child and predicts his probable future mental potentialities; the work of the social case worker who, through frequent visits to the child and conferences with the physician, the boarding mother and the psychologist, forms a definite picture of the kind of environment each child will be able to use; and who, after study of the environment offered by the various would-be adoptive families, selects the right family for each child in such a way that every child finds himself placed where he fits with his new family, and where he is the right child for that family.

It is evident then that adoptive placement is a process which should be performed only by those who have special facilities, aptitude, skill and training for it. The tragedy and unhappiness which follow every mistake should deter the Good Samaritan who inclines toward good deeds. The infant who needs care away from his own family is dependent in the truest sense, for his very helplessness is his only defense against the many dangers inherent in our complex way of living.

FRANK DAVIS PRESTON, A.B., LL.B.,  
*General Secretary, Children's Home Society of Virginia.*

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### Floral Eponym (27)

#### ARISTOTELIA

ARISTOTLE, 384-322 B.C.

Aristotelia is the only cultivated genus of the family Elaeocarpaceae; a genus of tropical shrubs and trees with opposite evergreen leaves. A few species grow in Southern California. *A. racemosa* is the New Zealand wineberry. The fruit of *A. macqui* is used for wine in Chile. That the "master of those who know" is remembered by so insignificant a genus, is possibly explained by the fact that the master was more interested in animals than in plants. No man has ever had so nearly an universal interest in all domains of knowledge, but botany claimed his attention the least. His contributions to medicine were chiefly in the fields of anatomy, physiology and embryology. He named the aorta, noted the movements of the foetal heart and the possibility of superfetation.

## PSYCHIATRY IN AN AIR FORCES STATION HOSPITAL\*

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A discussion of Psychiatry in an Air Forces Station Hospital demands that mention be made of the different types of individuals usually seen on an Army air base. Most people think of an air base as being comprised almost exclusively of fliers when, as a matter of fact, fliers make up only a small percentage of the personnel. On each Army air base there are many ground troops, troops that are in no way different from ground troops found on any of the large Army posts in the Ground Forces. Such ground personnel embrace outfits of chemical warfare, camouflage engineers, aviation engineers, ordnance, hospital corps men, truck drivers, etc. And now WACs and nurses contribute their share of women patients.

In any consideration of psychiatric problems in a Station Hospital it must be understood that many of the neuropsychiatric patients would not be in a hospital if they were in civilian life. In the Army there is no place for a man who is slightly ill. There are only two classifications: duty, which means full active service; or else hospital, which means hospitalization. Many cases of psychopathic personality, mental deficiency, and psychosis progress through civilian life without hospitalization. In the Army, a man who has even a mild psychic disturbance must be hospitalized during the period of study. The majority of neuropsychiatric patients are not ill enough to be in bed. Therefore, they are permitted to wear convalescent suits and walk about the ward as they please. They are all encouraged to take care of minor tasks, not only in their own ward, but in other wards, to give all of them something to do and to help reduce the number of required attendants.

A large number of factors, such as, "personality structure, fatigue, leadership, morale, discipline, job assignment, motivation, training and domestic difficulties"<sup>1</sup>, are important in causing personality disorders. Obviously a military psychiatrist cannot control or change all of these factors. He can, however, study each personality so that certain assets

can be used to produce a workable adjustment to a new military environment. Some individuals have so many liabilities that they cannot in any way be used in the military service. Such soldiers must be given a medical discharge. At our Station Hospital, Colonel Porter's character study of assets and liabilities is used<sup>2</sup>. It is assumed that each soldier must have at least four assets, and no more than six liabilities to be able to adjust to military life.

In discussing the various psychiatric problems in a Station Hospital a description can be divided into two parts. First, a brief description of each of the common psychiatric disorders encountered, and, second, a general description of the various forms of therapy used.

## PSYCHIATRIC PROBLEMS

**Constitutional Psychopathic States:** The constitutional psychopathic personalities express their psychic conflict by acts against their environment—acts which tend to get them into the guardhouse. Psychiatrists who practiced in state institutions before entering the military service rarely saw these individuals, unless they were committed to an institution as the result of an acute psychotic episode, or because of repeated sexual psychopathic acts. Psychiatrists in private practice seldom saw them except when such individuals occasionally were referred to them by police officials. This is understandable when it is realized that in civilian life these psychopathic individuals wandered about the country, changing jobs or sex partners as often as they desired, and in general doing about as they pleased. In military life, however, psychopathic personalities make themselves known without much delay, for they are usually in conflict with rules and regulations, and are unable to stand criticism and regimentation. And, most important of all, they are unable to adjust themselves to living with others in close quarters.

The Army recognizes in its psychiatric classifications several subdivisions of constitutional psychopathic states, such as inadequate personality, paranoid personality, emotional instability, criminalism, pathological liar, and sexual psychopathy. As would be expected, the largest number of cases are diagnosed as inadequate personalities—those individuals

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who, because of their lack of interest in the service, poor work record both in and out of the Army, lack of ability to conform to Army rules, and inability to get along with others, are unfit for military life.

The second largest number of constitutional psychopathic personalities that create a problem are those who are classified in the sub-group of emotional instability. The marked mood swings of these individuals frequently causes them to get into difficulty. Quarrels with non-commissioned officers and street fights are not uncommon. Although these individuals frequently regret their acts about as soon as the emotional storm passes, they never learn by experience and, therefore, never improve.

The sexual psychopaths usually cause their share of troubles on an Army post. Most homosexuals in civilian life are able to achieve sexual adjustments satisfactory to themselves, and the great majority of them seldom annoy individuals who are not so inclined. In the Army, however, where homosexuals are thrown into close contact with a large number of individuals of the same sex, there is bound to be some difficulty. Although many of them are able to make a fair adjustment, sooner or later they come into conflict with socially accepted rules and regulations of sexual conduct. Many of these men and women, who might otherwise get along well in the military service, must be discharged from the Army because of their annoying others who are not homosexually inclined.

The psychopathic personality who is also a chronic alcoholic is one of the most troublesome problems with which psychiatrists must contend in the service. A lack of understanding causes many line officers to believe that chronic alcoholism of many years duration can be cured by some form of punishment, such as a long sentence in the guardhouse. Examination of any guardhouse population will reveal the presence of some alcoholics who have had repeated sentences without any change of personality. Part of the psychiatrist's problem in these cases is to develop in the line officers (officers of company grade, captains and lieutenants) some insight into the nature of psychopathic personalities and the causes of chronic alcoholism.

The personality factors common to all Constitutional Psychopathic States are unreliability, unpredictability, pathological lying (lying without apparent reason at times to the point of fabrication), lack of a sense of moral obligation, and—most im-

portant of all—the inability to learn by experience. These individuals cannot, therefore, be rehabilitated in the sense that one rehabilitates psychoneurotics. The psychopaths cannot make good soldiers. No amount of psychotherapy makes any marked change in their thinking. They are always sources of danger in any fighting unit because of their unreliability. Because of their exhibitionistic tendencies and desire for the spectacular and the wish for praise, they often become heroes on an active rapidly advancing front, but in quiet sectors where there is no opportunity for them to stand out above others they may cost the lives of fellow soldiers by not attending to duty. Most civilians and many doctors believe that a little discipline in the form of physical punishment will rehabilitate these individuals and make good soldiers out of them. The experience of Army psychiatrists does not agree with this thought. The Army is not a reformatory or a clinic, and it is considered necessary to return these individuals to civilian life.

In the Army psychopaths tend to project on others their own difficulties. They accuse their fellow soldiers, as well as officers, of making it impossible for them to adjust to military service. Army experience has shown that psychopathic personalities are often more troublesome than soldiers actually suffering from psychoses. Many of the former individuals are in need of advice and coaching all their lives, and some of them should never live outside of a colony. Society has made no such provision for these people. The closest approach to it is the so-called sexual psychopathic law in some states, which requires that after three offenses such individuals be committed to hospitals for the criminal insane. Our present laws require Army psychiatrists to return many of these individuals to civilian life, although they recognize that this in no way solves the problem for either society or the individual psychopath.

Mental Deficiency: Army classification tests and study by psychiatrists at induction centers have not prevented a certain number of mentally deficient individuals from entering the Army. The high standard of education and intelligence requirement tends to eliminate the mentally deficient from entering flying training, but a number are encountered in the other units of the Air Forces enumerated previously. A number of psychological tests, such as the Kent Oral Emergency Test, Wechsler-Bellevue

Intelligence Scale (short form), and the Wechsler Mental Scale (Form "B") are used in this hospital. The performance of the individual and his emotional stability are considered in the intelligence rating in an attempt to adjust the individual to a certain job, because on many occasions it has been shown that a rather stupid individual will make an excellent soldier if placed in a job which fits his mental capacity and his interest. Intelligence tests are of value, but are considered only as a part of the psychiatric study. It is impossible to tell from the intelligence rating alone just how well an individual will work in accord with others in Army life, or just how well he will fit in with the various rules and regulations that are necessary for the success of a fighting unit. The civilian and military work history are carefully considered with the intelligence rating in making a classification of the individual for a specific job.

All imbeciles are unable to get along in military service and are usually discharged as rapidly as possible after they are discovered. Imbeciles and low-grade morons often simulate a higher degree of intelligence by the use of imitation. It is this use of imitation and mimicking of others that causes psychiatrists to be misled on the two or three minute psychiatric examinations that are conducted in induction stations. Careful study of this problem makes one conclude that it is amazing that psychiatrists at induction stations do as well as they do when one considers the number of men that they have to see each day, and the length of time in which they have to interview each man.

Much of the problem of mental deficiency in the Army is solved by properly classifying the soldier in a job which fits his mental capacity. It is sometimes found that a low-grade moron, who should have a job of sweeping or cleaning, is given a position which requires considerable reading and writing. The individual, not being able to handle such tasks, becomes frightened and discouraged, and often develops minor psychoneurotic complaints which ultimately cause him to go on sick call and appear at the dispensary. Thus a condition which often appears on the surface to be psychoneurotic in nature, is actually one of mental deficiency.

In evaluating psychological tests at this Station Hospital, the conclusion has been reached that the Kent Oral Emergency Test is a fairly accurate one for administering and scoring in ten to fifteen min-

utes, and requires little psychological testing experience. These factors make it a valuable adjunct to any personality study.

#### PSYCHONEUROSES

**Anxiety States:** The mental and physical symptoms due to anxiety are so commonplace that it will not be necessary to review them here. Anxiety probably is the basic factor in all psychoneurotic reactions and the most common problem the psychiatrist encounters. It may be present as a symptom in various psychiatric conditions, or it may be present in such degree as to become a distinct psychoneurosis. Most medical officers have a difficult time understanding that anxiety can be expressed in mental symptoms or in focal organ symptoms. For example, many officers can comprehend anxiety, apprehensiveness and fear, but they cannot understand that a man can have gastro-intestinal symptoms, such as pain due to duodenal spasm or diarrhea due to increased peristalsis on an emotional basis. Anxiety states or anxiety neuroses, as they were formerly called, make up the largest number of psychoneurotic diagnoses that are made in a Station Hospital. Anxiety states are much more frequently seen in officers than is hysteria, while in enlisted men the two conditions occur with about equal frequency.

Anxiety states are the most common psychoneurotic problems in pilots, and at times the condition is severe enough to cause the pilot to be grounded. The symptoms caused by the anxiety may be of such a minor nature that the pilot does not come into the clinic until he develops a phobia. Phobias found in pilots are almost always connected with a specific situation, such as a fear of flying at high altitudes, or a fear of flying over unfamiliar terrain. Study has shown that these phobias are sometimes related to an involved conflict in a field that is totally unrelated to flying. The pilot may have some sexual or financial problem which he is unable to solve, in addition to his mild anxiety connected with flying. As the tension connected with the involved conflict is added to the tension of flying, he develops a specific phobia which may incapacitate him for flying, and he is sent to the Psychiatric Clinic for help.

The phobias existing in pilots are considered as part of the anxiety. This is mentioned only to draw attention to the fact that anxiety states in pilots are sometimes much more complex in their origins than



they are in the average soldier in the Ground Forces.

**Hysteria:** Hysterical reactions with grotesque symptoms are seen, especially in soldiers of low-grade moron intelligence. Both negroes and whites born in this country furnish their share of cases of hysterical blindness, deafness, and aphonia, and it is not at all uncommon to see an hysterical hemiplegia in a soldier of average intelligence.

When a symptom, such as blindness or the paralysis of an arm or leg is well developed, the individual presents no evidence of anxiety. It is as though the anxiety had been eased or arrested by the development of a socially accepted symptom which relieves the individual of the necessity of facing situations which are potentially dangerous.

The soldier in a psychoneurotic ward feels that he is in a protected atmosphere. He senses security and is thereby relieved of the tension which he may have experienced early in his illness when first admitted to the hospital. It has often been noted that anxiety or hysterical symptoms which were temporarily relieved returned when the individual knew that he was to leave the hospital to return to duty, unless he has been carefully prepared for the change by a number of psychotherapeutic interviews.

**Hypochondriasis:** The word hypochondriasis, denoting a particular symptom in a psychosis or psychoneurosis, has been used for many years. The use of the term for a specific reaction type is relatively new. All the men who were placed in this classification were constantly concerned with their state of health and frequently expressed their discomfort in terms of organs rather than symptoms. They had a certain body awareness which made it possible for them to place an abnormal significance on normal physiologic functions. They interpreted a slight epigastric burning sensation as ulcer of the stomach, or discomfort from intestinal flatus as appendicitis. They presented a certain fixity of ideas in regard to specific organs. If one of them had begun to talk about his stomach, the story never changed. The history showed that he had been talking about and doctoring for his stomach trouble over a period of years. These psychoneurotic reactions were so deeply ingrained that they could not be changed by any amount of explanation of the lack of organic disease or by persuasion. It was soon learned that it was difficult to rehabilitate these soldiers for active duty in the limited time available for therapy.

Because of the frequency of gastro-intestinal complaints in hypochondriacal cases, it was thought important to review the various complaints in anxiety states and hysterical reactions and make a comparison. It was found that in the majority of all three of these psychoneurotic reactions the symptoms were in reference to the gastro-intestinal tract.

**Reactive Depression:** Reactive depressions are not common psychoneurotic reactions in the cases at this Hospital. Most of the patients who did present a reactive depression were WACs. The dynamic factors were usually easily determined and were frequently on the basis of a sexual conflict. This is to be expected in the cases where women originally entered WAC service motivated partly by a desire to escape an unpleasant domestic situation or to solve an emotional problem. In contrast to the reactive depressions seen in civilian life these patients rarely were depressed longer than three weeks. A few interviews which permitted a psychic catharsis tended to relieve the tension and offer an opportunity for a solution of the problem. All but two of our patients of this type were able to return to active duty, although many of them found it necessary to make an appointment at the Out-Patient Clinic for further psychotherapy.

**Obsessive-Compulsive States:** These psychoneurotic problems are rarely seen in the Army because the symptomatology is often so easily observed by the psychiatrist at the induction station. Examination of many hundreds of psychoneurotic patients has not revealed one case of an obsessive-compulsive state. This is fortunate, because these reactions are usually so ingrained in the individual that they are difficult to treat.

**Neurasthenia:** The diagnosis of neurasthenia was a most common one in the medical records of the last war. Apparently this was due to the inclusion under this heading of other reaction types which are now separated and called anxiety states, hysterical reactions, and reactive depressions. Neurasthenia at the present time is reserved for that group of individuals who express their various conflicts through fatigue which is unrelieved by physical rest, and by various indefinite aches and pains, and irritability. Most of the neurasthenic patients seen in the Station Hospital were individuals of extreme asthenic build who had received more education than the average soldier. They were often high school teachers, college instructors, and other professional peo-



ple. Often a reclassification of the soldier, so that he could be placed in a job for which his qualifications fit him, was better than any psychotherapy that could be offered. Frequently this was all that was necessary to clear up the complaints.

#### PSYCHOSES

Schizophrenic Reactions: In keeping with custom, the term Schizophrenic Reactions is used in preference to the old term of Dementia Praecox that is used in army medical classification. This general reaction type is divided into sub-groups of simple, catatonic, hebephrenic and paranoid, although it is understood that these groups blend one into the other and that there is considerable duplication of symptoms of one reaction type occurring in the other types. In contrasting civilian psychiatric practice with that of the Army, one is impressed immediately by the large number of schizophrenic reactions presenting an exceedingly bizarre symptomatology. These patients usually are brought into the closed ward in a mute catatonic state or in an excitement. The simple schizophrenic reaction so commonly seen in private psychiatric practice is rarely noted in the Army. It seems as though war produces psychotic reactions in their acute forms more frequently than the trials and stresses of peace-time civilian life.

In contrast to the frequency with which schizophrenic reactions are observed, no case of a manic stage of a manic-depressive psychosis has been observed in this Station Hospital. This infrequency of manic reactions in the Army has been observed by others. Only one case of a depression which could be classed as a depressive phase of a manic-depressive psychosis has been observed. Psychiatric texts still mention Kraepelinian manic and depressive phases of a manic-depressive psychosis as though they occurred with equal frequency. Yet clinical experience has shown that depressions are much more common than excitements and that repeated depressions occur without the individual ever having suffered a period of excitement. Study at other Station Hospitals may help further to clarify this point.

Psychoses Unclassified: Psychoses occurring in psychopathic personalities are classified as Psychoses Unclassified in Army nomenclature. Because of the aggressive behavior of most psychopathic personalities, a psychosis in such individuals is usually

ushered in by a period of combative excitement and destructiveness. As stated previously, one sees more psychopathic states in the Army than in private life. It follows that more psychoses in psychopathic states are seen in Army life than are seen in civilian life. These individuals are extremely difficult to manage, but fortunately they often quiet down and become cooperative within a period of two to three weeks. Most of them recover sufficiently to be discharged from the service to the custody of relatives within a period of eight weeks.

#### THERAPY

The psychiatric service in Air Forces Station Hospitals is provided with one to several open wards which are used for the care of psychoneurotics and one or more closed wards for psychotic patients. Each ward on the service is presided over by a nurse with rank of second lieutenant; and in all Station Hospitals having a large psychiatric service, there is a first lieutenant nurse who is chief nurse. She has usually had previous psychiatric nursing experience. The actual work on the wards is done by hospital corps men, who act as attendants. Few of the latter have had any hospital training before entering the Army. It is, therefore, necessary in addition to the daily routine work, to conduct a continuous educational program for the instruction of these men. In addition to the psychiatrically trained medical officers, there is a psychologist and a convalescent training instructor to complete the staff.

On the open wards, where most of the beds are occupied by psychoneurotic patients, treatment consists of psychotherapy plus a program of convalescent training. In a number of interviews the personality assets of the soldier or WAC are carefully evaluated in relation to the demands of a military life. If it is felt that the individual can be salvaged for full military duty, every effort is made to use his major assets in a job which fits his training and interest. Close contact, therefore, is maintained by the Psychiatric staff with the Classification officers. All patients who are to return to active duty are placed in convalescent training programs as soon as possible. This program consists of exercises, lectures, movies, woodworking, art, competitive games, and light duties in the ward. Experience has taught that convalescent training must be started early, because the longer a patient remains in the hospital,

the more difficult it will be for him to readjust to active military duty.

All patients in the Army who have suffered from a psychosis must be discharged unless the psychosis was precipitated by combat and the patient has recovered sufficiently to return to duty. A psychotic patient in this country who has completely recovered may be returned to his home. If the psychosis lasts, he is transferred to a Veterans' Facility for further care. In the latter case the soldier is discharged from the Army at the time he reaches the Veterans' Facility.

Facilities for hydrotherapy for psychotics, such as continuous flow tubs or specially built showers, are generally lacking in Station Hospitals. Mechanical therapy is confined to the use of either wet or dry packs. It has been found that disturbed patients can be controlled by the use of cold wet packs during the day and sedatives administered orally at night. No attempt to keep noisy patients quiet during the day is made; at night they are given sedatives, not only to quiet them, but to permit other patients in the hospital to obtain sufficient rest.

Shock therapy in the form of insulin or metrazol injections is not used in the Station Hospital. Since the discontinuance of the use of shock therapy in this Station Hospital, there have been just as many recoveries in as short a period of time through the use of psychotherapy. It has repeatedly been brought to the attention of the men on the Neuropsychiatric staff that many patients do recover from acute psychotic episodes with the use of psychotherapy only. As soon as possible a psychotic pa-

tient is informed that he will be discharged from the service. The realization of this fact often does much to relieve the patient of his acute symptoms.

Many of the acute psychotic symptoms appear to be caused by fear, so use is made of the quieting effect of the neutral atmosphere of the hospital. All attendants and medical officers endeavor to create a feeling of security for the patient. Through repeated interviews the importance of recovery and adjustment is stressed, so that he can look forward to returning home rather than be transferred to a Veterans' Facility or State Psychiatric Hospital. In both psychoneurotic and psychotic cases the patient is made to feel that he is an individual problem, that the psychiatrist is definitely concerned with his welfare, and that every effort is being made to help him adjust to military life or, if impossible to continue in the service, to readjust to civilian life. In the case of psychoneurotics every opportunity is taken to paint a discouraging picture of the inability to return to duty, while the advantages of returning to duty are presented in an enthusiastic light. The outstanding advantages stressed are the desire to be with one's buddies and contribute one's part to the War effort.

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#### Women Medical Officers.

There are currently 74 women medical officers serving in the Army, according to the Office of The Surgeon General. Of this number four are majors, 36 are captains and 34 are first lieutenants. They have been certified as internists, neuropsychiatrists,

obstetricians, gynecologists, pathologists, radiologists and anesthetists, and the Army has given them assignments in line with their specialties at general, regional and station hospitals as well as at the two WAC training centers. Seventeen of these women medical officers are now serving overseas.

## ERYTHROBLASTOSIS FOETALIS AND THE Rh FACTOR\*

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Erythroblastosis may be defined simply as the presence or increase of normoblasts in the circulating blood. The condition erythroblastosis foetalis may be defined as a disease in which the primary disturbance consists of an abnormal destruction and abnormal production of red cells in the fetus or newborn. Dameshek, of Boston, says that erythroblastosis foetalis is primarily an acute hemolytic anemia of the newborn due probably to an agglutinative hemolytic process. Rautman, in 1912, first used the term, and since the recognition of the disease Dr. Phillip Levine, of Newark, N. J., has probably done more than anyone to clarify the condition.

The Rh factor is a new blood factor found in man. It is an antigen attached to the human red blood cell which was first discovered by Landsteiner and Weiner in 1940. The term Rh is used because the antigen was first found in the *Macaca rhesus* monkey. The Rh factor is found in about 85 per cent white people, 92 per cent Negroes, 100 per cent Chinese and in all *Macaca rhesus* monkeys. Individuals who possess the Rh antigen are called Rh positive and those who do not are called Rh negative. The Rh factor is important because on this basis we can explain, first, reactions following repeated transfusions of compatible blood, and, secondly, the pathogenesis of erythroblastosis foetalis. If the Rh agglutinin is repeatedly introduced into the blood stream of the Rh negative individual it acts as an antigen and Rh antibodies are produced. This process is called immunization or iso-immunization since both the antigen and antibodies belong to the same species; therefore, if an Rh negative patient is repeatedly given blood from an Rh positive donor, Rh antibodies will be formed in the recipient's blood which attack the Rh antigen of the donor's blood, producing agglutination, hemolysis, and, finally, the reaction associated with blood transfusions.

The pathogenesis of erythroblastosis foetalis may be explained as follows: The fetus or baby inherits the Rh antigen from the father who is Rh positive,

through the genes. The baby's red cells which contain the Rh antigen enter the maternal circulation through a break in the placenta and there in the blood stream of the mother who is Rh negative the Rh antibodies are formed. These Rh antibodies in turn pass back into the fetal circulation and attack the Rh antigen of the baby's cells producing agglutination and hemolysis resulting in erythroblastosis foetalis.

The condition erythroblastosis foetalis is characterized by jaundice, anemia, leukocytosis, enlarged spleen and sometimes enlarged liver, and, most important, an increase in normoblasts. The jaundice is found early, sometimes at birth or occurring 24 to 48 hours after birth. The leukocyte count may vary from 30,000 to 100,000. The normoblasts are partly responsible for this high count. The anemia may be moderate or severe. To make a diagnosis of erythroblastosis the following findings are important, taking also into consideration the above-mentioned characteristics: The baby should be Rh positive, the mother Rh negative and the father Rh positive. There is a history of repeated miscarriages, still-borns, or babies dying several hours to a few days after birth. As a rule erythroblastosis is not frequently found in the first born but most likely in the second or later pregnancies. The placenta may be enlarged and jaundiced; however, this finding, I believe, is an infrequent one. Congenital hydrops and icterus gravis may be conditions coming under the general discussion of erythroblastosis. Such diseases as congenital syphilis, septicemia, etc., should be considered and ruled out.

Since, as previously mentioned, 85 per cent of white people are Rh positive, it would appear that a large number of babies would have erythroblastosis. In approximately 12 per cent of all marriages the wife is Rh negative and the husband Rh positive and out of all pregnancies erythroblastosis actually occurs in .1 to .2 per cent. Javaret has stated that erythroblastosis occurs once in 438 full term pregnancies. Such a low percentage may be explained: 1. By the low antigenic potency of the Rh factor; 2. The ability of the maternal organism to produce antibodies, and 3. The inability of the

\*Read before the annual meeting of the Medical Society of Virginia at Richmond, October 23-25, 1944.



antigen to pass from the fetal circulation to the maternal circulation.

The prognosis is very poor and approximately 70 per cent of these babies die. The outcome is thought to depend on the time the process of immunization started. Pregnancies with early immunization will result in miscarriage or deeply jaundiced full term babies that die early after birth, or the so-called congenital hydrops of which practically all die. If the process of immunization starts later in pregnancy, the baby may suffer a mild hemolytic anemia with a fair prognosis.

The treatment of erythroblastosis is primarily transfusions. It is very important that the diagnosis be made early and transfusions given early. A delay of a few hours may mean death. The donor must be of a compatible type and an Rh negative individual. If it is impossible to obtain an Rh negative donor, it is better to give Rh positive blood than none at all. By giving blood, the proper blood volume is maintained to prevent anoxemia and to give the baby time to rid itself of the Rh antibodies. The average total volume of blood of the newborn is between 250 c.c. to 350 c.c., so that if all the babies' blood cells were destroyed they could easily be replaced by Rh negative cells. It is strongly recommended that the blood be given intravenously. It may be given by the drip method over a period of several hours. The method of choice appears to be repeated small transfusions giving approximately 10 c.c. of blood per pound of body weight. The most accessible veins are found on the scalp, dorsum of the hand and ventral portion of the wrist. The veins in the cubital space and on the ankle are not satisfactory to use. The longitudinal sinus should never be used. The method of "cutting down" may be resorted to but this is rarely necessary if one is versed in the technique of using scalp veins. These babies should not be allowed to nurse the breast. It is thought that Rh antibodies may be transmitted through breast milk. Vitamin K, iron and calcium given the mother during pregnancy when erythroblastosis is expected has been found to be of no value.

The procedure used in determining the presence of the Rh antigen will be briefly mentioned. The technique is as follows: Prepare a fresh saline suspension (.2 c.c.) of red cells to be tested. Before proceeding with the test examine this suspension for any hemolysis or agglutination. Then place at the

bottom of a culture tube one drop of this suspension. Place in the same tube a drop of the anti-Rh sera (both drops should be of the same size). Shake mixture very gently, then place in a water bath at 37° C. for one to one and a half hours. Centrifuge at 500 RPM for one minute. Resuspend gently and observe macroscopically for clumping. If there is clumping the results are Rh positive. In other words, the red cells contain the Rh antigen. If clumping is not present macroscopically, then observe under a microscope. If clumping is not seen then, the test is Rh negative. At times when Rh negative donors are not available and Rh negative blood is needed, the modified compatibility test, as outlined by Levin, should be done. An equal amount of the patient's serum and prospective donor's cells are incubated in a water bath for 15 to 30 minutes at 37° C. The mixture is centrifuged at 500 RPM for one minute and the sediment resuspended for the presence or absence of agglutinations. The anti-Rh sera used in determining the Rh factor may be obtained from such commercial laboratories as Gradwohl, in St. Louis, or Lederle, in New York City. It may be obtained from the mother who has given birth to an erythroblastic baby. This source is the most reliable one and the blood must be obtained within two weeks after delivery. Anti Rh sera may also be obtained from an individual who has had a transfusion reaction caused by the Rh factor.

Within the past six years I have seen 8 cases of erythroblastosis foetalis. Five of these babies died. Three cases I should like to present.

The first is quite a typical one. It was the second pregnancy; the first baby was normal. I saw the baby within twelve hours after delivery and at this time he was deeply jaundiced, spleen was enlarged and the blood count revealed RBC 4,500,000, Hgb. 95 per cent, WBC 28,000; PMN 80 per cent, lymphocytes 15 per cent, monocytes 5 percent, normoblasts 10 per cent. The father was Rh positive, the baby Rh positive and the mother Rh negative. A transfusion of 60 c.c. of Rh negative blood was given. The next day the blood count was practically the same except for a normoblast count of 5 per cent. Again 60 c.c. of blood was given. On the 13th day after birth the baby left the hospital in good condition. The Hgb. was 100 per cent and normoblasts were not present. When the baby was 20 days old the Hgb. had dropped to 44 per cent and normo-

blast count was 15 per cent. At this time he was given three transfusions of 50 c.c. each and when discharged the Hgb. was 89 per cent and normoblast count 3 per cent. The spleen was still enlarged, but the jaundice had cleared. At the age of six weeks the Hgb. had dropped again to 54 per cent and at this time two transfusions of 70 c.c. each were given. After these transfusions the baby was able to maintain the proper blood level and has done well since. A total of 390 c.c. of blood was given over a period of six weeks, so we can say that practically all of the baby's original blood volume was replaced.

The second case was that of twins in which one had erythroblastosis foetalis and died, and the other was a normal newborn. This was a double ova pregnancy, one a boy and the other a girl. There were two normal placentas. The baby was intensely jaundiced at birth, and the spleen was enlarged. The blood count revealed RBC 4,600,000, Hgb. 90 per cent, and WBC 31,300, with 30 per cent normoblasts. He was given two transfusions. Just before death, which occurred on the third day, the icteric index was 400 units. Autopsy findings were those of erythroblastosis foetalis. This case is an example in which the father was heterozygous for the Rh factor. Two ova were fertilized, one by a sperm carrying an Rh positive gene and the other by a sperm carrying the Rh negative gene. This was the mother's third pregnancy. The two others produced normal babies.

The third case is that of the death of a mother following a transfusion of blood obtained from the husband. This woman had had a total of ten pregnancies. Of these ten pregnancies one lived and that one only for two months. Some were still-borns, some died several hours to a few days after birth and other pregnancies terminated in miscarriages. In March, 1937, I saw one of her babies who was delivered at term and died several hours afterwards. A diagnosis of erythroblastosis foetalis was made for the first time. The mother was strongly advised not to become pregnant again. Six years later she became pregnant but did not take the advice of her physician to have the pregnancy terminated. At term she was delivered of a fetal monster by Cesarean section. After the operation her Hgb. was 47 per cent with a red count of 2,000,000. A transfusion was considered and the husband was found to be compatible. His blood was used and the patient

suffered a transfusion reaction and died several hours later. The husband was thought to be an Rh positive individual but since there was delay in finding another compatible donor and due to the urgency of the transfusion, his blood was used. This case clearly illustrates a reaction and death following the transfusion of Rh positive blood to an Rh negative mother who had previously given birth to an erythroblastic baby. The Rh positive baby had produced Rh antibodies in the mother's blood stream. This in turn caused agglutination and hemolysis of the Rh positive blood given by the father which produced the reaction and death.

#### DISCUSSION

DR. HARVEY BLAND, Newport News (read by Dr. T. C. Lawford): Dr. Hogg in his discussion of erythroblastosis foetalis and the Rh factor has presented in a concise and understandable manner a most important and complicated subject. He has been too modest to say so, but I am sure that by the early recognition of erythroblastosis in several of his recent cases and by instituting the course of treatment which he has outlined, Dr. Hogg has saved the lives of several infants which otherwise would probably have succumbed.

There are many fascinating considerations of this subject upon which it is interesting to speculate and upon which further investigation will no doubt enlighten us. Its genetic, racial and legal aspects raise many questions as yet unanswered. For instance, will further enlightenment on this subject give us a means of determining true parentage in cases in which it is disputed? Will the time come with the advent of state medicine when every premarital examination will include a determination of the Rh factor and marriage be prohibited or at least discouraged in those couples with an Rh factor incompatibility? What is the explanation of the fact that 100 per cent. of the Chinese are Rh positive and not more than 85 per cent of the white race are Rh positive? Does this mean that the white race is further removed in kinship from its anthropoid relatives? Had the Japanese been used in this study instead of the Chinese we perhaps would have more definite proof of such an assumption. Does an incompatibility of the Rh factor contribute to the development of feeble mindedness? This has been suggested. Will other similar agglutinins be discovered which may solve the etiology of habitual abortions, sterility, or eclampsia?

And now I wish to enumerate very briefly some of the practical applications which we can make of this subject from the obstetrical viewpoint.

1. Rarely is erythroblastosis encountered in a first pregnancy, unless an Rh negative mother has previously been transfused with Rh positive blood.
2. Every pregnant woman who has given birth to a suspected erythroblastotic offspring should have her Rh factor determined.
3. Every obstetrical patient in which blood transfusion

is contemplated should have her Rh factor determined. An Rh negative recipient should be transfused only with blood from an Rh negative donor.

4. The mother of an erythroblastotic infant should not nurse her baby.

5. Premature delivery by Cesarean section is not indicated in patients suspected of bearing an erythroblastotic offspring.

6. When artificial insemination is to be done, only sperm from an Rh negative donor should be used for an Rh negative recipient.

7. No evidence has as yet been brought forth to show

that Rh agglutinins are responsible for early abortions, premature separation of the placenta, placenta praevia or toxæmia. They may be a contributing factor in increasing the incidence of late miscarriages and premature labor.

8. A woman having given birth to a proven erythroblastotic infant should be discouraged from further child bearing.

It is hoped and perhaps not too much to expect that in the near future some neutralizing substance will be found which will eliminate some if not all of the havoc wrought by this antigen.

## New Books.

The following books are recent acquisitions at the Library of the Medical College of Virginia and are available to our readers, under usual library rules:

Allport—Chemistry and pharmacy of vegetable drugs.  
American National Red Cross—Textbook on Red Cross Home Nursing. School edition. 1943.

Anson, ed.—Advances in protein chemistry.

Arnold—The Pathogenesis of Tuberculosis.

Babcock—Principles and practice of surgery.

Biddle—Introduction to psychiatry.

Blanton, Wyndham—The Making of a Downtown Church.

Carter—A laboratory course in general chemistry. 2nd ed. 1931.

Christopher—Minor surgery. 1944.

Cole—A history of comparative anatomy from Aristotle to the Eighteenth Century.

Donaldson—Surgical disorders of the chest.

Eddy—The avitaminoses.

Ellis—The classification and treatment of injuries to the teeth of children.

Goudge—Green Dolphin Street (a novel).

Izquierdo—Bernard, Creador de la Medicina Científica.

King—The recovery of myself.

Lemon—From Galileo to cosmic rays.

Linton—The science of man in the world crisis.

Loeb—Biological basis of individuality.

Mayor's Com. on Marihuana—Marihuana problems.

Mohr and Redwood—Practical pharmacy: The arrangements, apparatus, and manipulations of the pharmaceutical shop and laboratory. 1849.

Orias—The heart-sounds in normal and pathological conditions.

Russell—comp. and ed.—Terminal education in higher institutions.

Strong—Procedures in experimental physics.

Sutton—Synopsis of diseases of the skin.

U. S. Office of Education—Vocational-technical training for industrial occupations. 1944.

Year Book of Obstetrics and Gynecology—1944.

## Army Achieving Speedy Expansion of Hospitals.

The Army's expansion of its general hospitals by 70,000 beds is being rapidly accomplished through the conversion of existing buildings on hospital grounds rather than through new construction, according to the Office of The Surgeon General.

"At many of the general hospitals," said Brigadier General Raymond W. Bliss, USA, Assistant Surgeon General, "there are well-constructed barracks, built with an eye to the future, which were used to house overseas hospital units during their training period. These barracks are now being turned into wards for patients. Permanent barracks, built to house the hospital staff, are also being converted into wards and are being replaced with temporary barracks which can be quickly constructed."

Over 50,000 more patients are being cared for in the Army's general hospitals than was the case three months ago. During the past month about 1,200 casualties arrived from overseas daily.



## VASA PREVIA\*

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and  
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The dictionary defines vasa previa as "a condition in which the blood vessels of the umbilical cord where they enter the placenta present in front of the fetal head in labor". This definition is open to several objections. The fetus need not present by the head, and the mother does not have to be in labor for the condition to exist. Nor does the umbilical vessel have to be near the placenta. It may lie across the *os uteri* as it courses in the fetal membranes at a considerable distance from the placenta. Our second case illustrates this point. A velamentous insertion of the cord is usually a prerequisite, although it is conceivable that a blood vessel running to a succenturiate placenta or between a bipartite or multipartite placenta might be involved. Klumper<sup>31</sup> has had such a case. Another possibility is an aberrant blood vessel in a normal implantation of the umbilical cord. Sometimes in a marginal attachment or even an eccentric attachment, a blood vessel will leave the placenta and course for a considerable distance between the membranes before it penetrates the placental tissue. Such a vessel could overlie the internal os and in that case would be a vasa previa. No such case has been reported to the writers' knowledge.

The frequency of velamentous insertion of the cord is variously stated at between 0.4 to 1.25 per cent. Lefevre<sup>2</sup> found it present in 0.84 per cent of 15,894 cases. It occurs 9 times more frequently in twin pregnancies than in single pregnancies,<sup>3</sup> and it is almost a routine finding in triplets. In the last 6,421 deliveries at the Johnston-Willis Hospital it was noted 15 times (0.24 per cent). It carries a definite risk to the fetus. The umbilical vessels may be compressed, causing asphyxia, or one or more vessels may rupture with the loss of fetal blood. Whitehouse<sup>4</sup> reported a case of velamentous insertion of the cord and the spontaneous delivery of a stillborn baby. As the autopsy showed no cause of death, it was inferred that the velamentous insertion of the cord was responsible. There was no ruptured blood vessel in his case. The rupture of one

or more of the unsupported vessels is a real hazard. The vessels need not run across the mouth of the womb for this to happen. In the cases reported by Kosmak,<sup>15</sup> Specken,<sup>36</sup> and Williamson<sup>16</sup> the ruptured vessels were in the fundus of the uterus.

Vasa previa has now attained a definite place in nosology. In 1936 Kobak and Cohen<sup>7</sup> reported a case of velamentous insertion with spontaneous rupture of vasa previa in twin pregnancy, and in 1943 Vogt<sup>8</sup> reported a case simply as vasa previa. Previously the cases in American literature have been reported as a complication of a velamentous insertion of the cord. In a recent report<sup>9</sup> on placenta previa, vasa previa is mentioned in the differential diagnosis as a possibility to be kept in mind.

## ETIOLOGY

The etiology of vasa previa is fundamentally dependent upon abnormalities and irregularities of the placenta and the attachment of the cord which leave umbilical blood vessels exposed in folds of the amnion, unsupported by either the umbilical cord or placental tissue. There is an added factor, as yet unknown, possibly mere chance, that determines the position of such blood vessels. Arey<sup>10</sup> explains these anomalies as being due either to growth irregularities or to the persistence and independent development of asymmetrical or multiple patches of chorionic villi. V. Franque's<sup>11</sup> explanation of a velamentous attachment of the cord is the one that is most generally accepted. This presupposes that the cord arises in the beginning from the most vascular portion of the chorion. If this happens to be in the decidua capsularis, and the development of the placenta is subsequently shifted to the decidua basalis as the vascularity of the capsularis diminishes and the basalis increases, a velamentous insertion results.

The frequency of vasa previa must be small for the underlying anomalies occur in less than 1 per cent. The chance of an unprotected fetal blood vessel lying over the internal os must be much less. On the other hand, many cases with unruptured vessels probably go unrecognized and unreported. We have all seen secundines with the rupture of the

\*Read before the Richmond Academy of Medicine, April 25, 1944.

membranes between the unruptured vessels of a velamentous insertion and have dismissed the occurrence with the remark that the baby had a close call.

#### DIAGNOSIS

The antepartum diagnosis depends upon palpating the pulsating vessel or vessels upon vaginal examination. The pulsating umbilical cord which might be confused with a vasa previa is readily differentiated by the ease with which it is pushed aside by the examining finger. Ahlfeld<sup>12</sup> made such a diag-

5 such cases. Moorehead and DeCarle at the Mayo Clinic reported a case with a prolapsed cord in which they did a version and extraction because of signs of fetal distress and delivered the baby between the unruptured vessels of a velamentous cord. Most writers on the subject agree that the diagnosis is seldom made before delivery. Graff,<sup>21</sup> writing in 1921, stated that in 51 known cases of vasa previa, only 4 were diagnosed during labor. The condition is usually mistaken for a placenta previa or a premature separation of a normally implanted placenta.

#### PROGNOSIS

The presence of a vasa previa adds nothing to the risk of the mother unless through a mistaken diagnosis some unwarranted operation is undertaken. Many cases have been diagnosed either placenta previa or separation of a normally implanted placenta. A Cesarean section or other major obstetrical operation in the interest of the mother is not indicated. The blood loss is entirely fetal and blood transfusion to the mother is useless and not without danger.

The prognosis for the baby is grave. Graff<sup>21</sup> found the fetal death rate to be 58 per cent. Most babies have been stillborn when there has been a rupture of an umbilical vessel, and this applies whether the vessel was a previa or not. In fact, the few fetal survivals have all been in the previa group. Caffarotto<sup>15</sup> reported three cases of vasa previa: one with a stillborn baby, one with an asphyxiated baby that recovered, and one baby that died in a few days of anemia. In Acosta-Sison and Datoc's<sup>18</sup> case the baby lived eighteen hours. Moorehead and DeCarle<sup>14</sup> reported a case already mentioned of a multipara whose membranes ruptured before engagement of the head. When the cervix was dilated 5.5 cm., vaginal examination disclosed a prolapsed cord. Because the fetal heart tones increased from 160 to 200 and this was not relieved by disengaging the head, a manual dilatation of the cervix was done, followed by version and extraction. The baby was delivered through a hole in the membranes between the unruptured vessels of a velamentous insertion of the cord. The baby survived. Hartman<sup>16</sup> had a case complicated by marginal placenta previa. He delivered the baby by version and extraction and this baby lived. Vogt<sup>8</sup> had a live baby delivered by Cesarean section under the mistaken diagnosis that he was dealing with a placenta previa.



After-birth of Case II. The amniotic cavity has been stuffed with cotton to restore its contour. The placenta does not show in the photograph because it is on the opposite side from where the membranes were ruptured.

nosis once, and Benckiser, Ricker, Heckes, and Holliday are credited<sup>12</sup> with having made such a diagnosis. The condition should be thought of when there is vaginal bleeding at the time of the rupture of the membranes, especially if there is a change in the rhythm of the fetal heart sounds. Since velamentous attachment of the cord is many times more frequent in multiple pregnancies, vasa previa should be thought of when vaginal bleeding is associated with multiple pregnancy. The simultaneous rupture of the membranes and vaginal bleeding, however, is not a sure sign. The vessels may rupture before the rupture of the membranes. Lazarini<sup>13</sup> has collected ten such cases. On the other hand, the exposed blood vessels may not rupture at all. Two of Ahlfeld's 3 cases had unruptured vessels. Graff reported one case with unruptured vessels and Lefevre

## LIST OF CASES FROM AVAILABLE LITERATURE

AUTHOR	TIME OF RUPTURE OF VESSEL	MEMBRANES	MOTHER	BABY	REMARKS
Acosta-Sison & Datoc <sup>18</sup>	When the cervix was nearly dilated	Amniotomy after bleeding begun	III para	lived 18 hours	Pituitrin under diag. of premature separation of placenta
Ahlfeld <sup>12</sup>	Unruptured	In course of normal labor	I para		Pulsating vessels felt diagnosed vasa previa
Ahlfeld <sup>12</sup>	Unknown as deeply engaged head prevented escape of blood	At full dilatation	II para	dead	
Ahlfeld <sup>12</sup>	Unruptured	In course of normal labor	I para		
Benckiser <sup>2</sup>	When membranes were ruptured	At full dilatation	26 yrs.	died shortly	Pulseless vessel felt forceps delivery
Boley <sup>25</sup>	1 hr. after onset of labor	Ruptured when bleeding began	20 yrs.	dead	Spontaneous delivery
Caffaratto <sup>15</sup>	7 hrs. after onset of labor	Ruptured prematurely	25 yrs. I para	lived	Forceps delivery
Caffaratto <sup>15</sup>	Early in labor	Prematurely	27 yrs. II para	dead	Prolapsed cord forceps
Caffaratto <sup>15</sup>				died in few days	
Cazeaux <sup>28</sup>	At beginning of labor		29 yrs. V. para	dead 7 months	Diag. placenta previa by midwife
Charpentier <sup>31</sup>	½ hr. after rupture of membrane	At full dilatation		Resuscitated	
Croom <sup>2</sup>	Early in labor	Early in labor	40 yrs.	dead	Spontaneous del. Diag. accidental hemorrhage
Croom <sup>2</sup>	When version was done	At full dilatation	Multip.		Diag. vasa previa, prolapsed cord and placenta previa
Dreyfus <sup>23</sup>	At onset of labor	Unruptured	21 yrs.	dead	Spontaneous delivery
Dreyfus <sup>23</sup>	At onset of labor	Ruptured	I para	lived	Spontaneous delivery
Frommolt <sup>22</sup>	Before onset of labor	Unruptured	31 yrs. IV para	dead	Diag. placenta prev., version, pituitrin, spontaneous delivery
Graff <sup>21</sup>	Unruptured				Lateral placenta prev., vessels felt. Baby delivered with forceps between unruptured vessels
Hartman <sup>16</sup>	Before onset of labor		VII para	lived	Lateral placenta prev. and vasa prev., bag and version and extraction between unruptured vessels
Hecker <sup>2</sup>	When membranes ruptured	At full dilatation	I para	dead	Vessels felt but thought to be placenta prev., spontaneous delivery
Hugues <sup>2</sup>	When membranes ruptured	Early in labor	27 yrs. I para	dead	Spontaneous delivery
Huter <sup>35</sup>	Unruptured	Unruptured	26 yrs. II para	Resuscitated	High forceps
Klumper <sup>31</sup>	In labor	In labor		dead	Vessels between 2 placentas ruptured
Knapp <sup>19</sup>		Ruptured		dead	Rupture of one vessel caused death of both twins
Kobak & Cohen <sup>7</sup>	Onset of labor	Early in labor	20 yrs. I para	dead	1st twin delivered with forceps, 2nd spontaneous
Kosmak <sup>5</sup>	At onset of labor	Ruptured	35 yrs. I para	lived	Forceps delivery
Langerhans <sup>2</sup>	When membranes ruptured	4 hrs. after onset of labor	I para	dead	Forceps delivery
Lazarini <sup>13</sup>	Before labor	Unruptured	I para	dead	Diagnosed placenta prev.
Lefevre <sup>2</sup>	Unruptured	2 hrs. after onset of labor	37 yrs. IV para	lived	Spontaneous delivery
Lefevre <sup>2</sup>	Unruptured	12 hrs. after onset of labor	21 yrs. I para		Forceps delivery



## LIST OF CASES FROM AVAILABLE LITERATURE—CONTINUED

AUTHOR	TIME OF RUPTURE OF VESSEL	MEMBRANES	MOTHER	BABY	REMARKS
Lefevre <sup>2</sup>	Unruptured	At onset of labor	II para	lived	Spontaneous delivery
Lefevre <sup>2</sup>	In 3rd stage of labor	Before onset of labor	29 yrs. II para	lived	Spontaneous delivery
Lefevre <sup>2</sup>	Unruptured	1 hr. before delivery	22 yrs. I para	lived	Spontaneous delivery
Lefevre <sup>2</sup>	Unruptured	Prematurely	II para 27 yrs.	lived	Spontaneous delivery
Morehead & DeCarle <sup>14</sup>	Unruptured	Ruptured	Multip.	lived	Accouchement force, version and extraction between vessels
Muschik <sup>24</sup>	Before labor	Unruptured	29 yrs. II para	dead	Spontaneous delivery
Nijhoff <sup>30</sup>	Before labor	Unruptured	X para	dead	Spontaneous delivery
Noldeke <sup>26</sup>	Before labor	Unruptured		dead	Vaginal cesarean section
Noldeke <sup>26</sup>	Before labor			dead	Spontaneous delivery
Panis <sup>28</sup>	When membranes ruptured	At onset of labor	36 yrs. V para	dead	
Peiser <sup>20</sup>	Before labor	Ruptured	III para	dead	Spontaneous delivery
Records <sup>27</sup>	Before labor	Ruptured	I para	dead	Prolapsed cord
		Unruptured		lived	
Ricker <sup>2</sup>	Before labor	Ruptured	II para 26 yrs.	dead dead	Vasa previa felt but not recognized. I spontaneous del. II version and extraction
Rucker & Tureman	Unruptured	Amniotomy to induce labor	29 yrs. I para	lived	Version and extraction between vessels
Rucker & Tureman	Before labor	Amniotomy to induce labor	30 yrs. II para	lived	Spontaneous delivery
Rucker & Tureman	Unruptured	Amniotomy to induce labor	32 yrs. V para	lived	Low forceps
Ruge <sup>34</sup>	Unruptured	Prematurely	30 yrs. I para		Cesarean section for prolapsed cord
Russin <sup>32</sup>	Cervix was 6 cms. dilated	Membranes rup. soon afterwards	24 yrs. I para	Resuscitated	Thin artery wall
Valenta <sup>2</sup>	After rupture of membranes	After onset of labor	30 yrs. II para	dead	Diagnosed ablatio placenta
Vermelin <sup>33</sup>	At onset of labor	End of 1st stage	25 yrs. II para	dead	Spontaneous delivery
Vogt <sup>8</sup>	7th month before labor	Unruptured	23 yrs. II para	lived	Cesarean section for placenta prev.
Wahl <sup>29</sup>	Before labor	Unruptured	24 yrs. I para	dead	Labor induced with pituitrin. Spontaneous delivery

## TREATMENT

It should be emphasized that vasa previa is essentially a fetal complication. Few obstetrical conditions carry so much risk for the baby and so little risk for the mother. Consequently, any change in the management of the case must be undertaken solely in the interest of the fetus. Schumann<sup>17</sup> describes the treatment as follows: "Should the pulsating vessel be palpated within the cervix, prompt delivery by the most available method is the only treatment." The chief difficulty with this advice is that the diagnosis is practically never made before the rupture of the velamentous vessels and rarely before delivery. In the two cases we are reporting,

labor was induced by amniotomy. One mother was delivered by version and extraction, and the other by Ritgen's manoeuvre. Both mothers and both babies survived. Vasa previa was not suspected until the placenta and membranes were inspected. This treatment, judged by results, left nothing to be desired. Nevertheless, in the light of our comparative inexperience, we are not prepared to recommend such treatment for vasa previa.

Should the condition be discovered while the umbilical vessels are intact, an effort should be made to protect them as much as possible. Kosmak,<sup>5</sup> Hartman,<sup>16</sup> and others suggest the use of a bag for this purpose. When there is full dilatation of the

cervix, Hartman says it might be possible to rupture the membranes between the vessels and deliver the baby safely *per vaginam*. Should the vessels rupture at this stage there is a good chance of saving the baby by version and extraction. It is interesting at least, that three of the five live babies (including the two we are reporting) in recent reports were delivered by version and extraction.

In the interest of the child a Cesarean section should be considered, especially if the mother is near the end of her childbearing career. This applies also to cases with ruptured vessels if the fetal heart tones are of good quality. On the other hand, if the baby is already dead, there is no point in doing a section.

Even if the baby is born alive, it is likely to have a severe anemia. Caffarotto<sup>15</sup> reported a case in which the baby died of anemia on the second day. A prompt blood transfusion offers the best chance of saving such babies.

#### CASE REPORTS

*Case I.*—Mrs. J. J. P., age 29, a primigravida, entered the Johnston-Willis Hospital October 30, 1943, for induction of labor at term. Her pelvis and urine were normal. The blood Wassermann was negative and blood pressure on October 15 was 130/80. On October 30 it was 130/90. She had had a previous appendectomy. A maternal aunt had died of diabetes. Otherwise, her past history and family history were negative. The baby was in R O P position and the head was engaged. The Ahlfeld measurement was 29 cm. and the McDonald 35 cm. The cervix was soft and admitted one finger. The membranes were ruptured and after a latent period of 29 hours, and a first stage of 17 hours and 13 minutes, the cervix was completely dilated. The patient had been given 6 grains of sodium amytal, a total of 1/50 of a grain of hyoscine, and an instillation of ether and oil into the rectum for first stage analgesia. She was now given inhalation ether. The pudendal nerves were blocked. A right medio-lateral episiotomy was done. The baby was delivered by version and extraction with forceps on the after-coming head. The patient was given ergotrate intravenously, and the placenta was delivered by the Brandt-Andrews method. About 200 cc. of blood was lost. The baby was a male 51 cm. long, and weighed 6 pounds 10½ ounces (3,019) grams). He cried spontaneously. There was a velamentous at-

tachment of the cord and the rent in the membranes was between the unruptured umbilical vessel. The mother and baby were discharged from the hospital on November 9, 1943, in good condition. Postpartum examination on December 7 showed a small, round cervix and well involuted, anteflexed uterus.

We are indebted to Dr. Herman Bailey for permission to report the following case:

*Case II.*—Mrs. G. P., Jr., age 30, gravida II, entered the Johnston-Willis Hospital on September 14, 1943, for induction of labor at term. Her only complaint was an occasional feeling of discomfort in the lower abdomen. Vaginal examination revealed the cervix to be 4 cm. dilated and ½ cm. thick. The membranes were ruptured at 12:25 P. M. and the patient began bleeding immediately from within the cervical canal. No placental tissue could be felt with the examining finger. The bleeding was not profuse and ceased before the patient was taken back to her room. Labor began one hour and 35 minutes later, and bleeding started again. The bleeding was never profuse, but continued intermittently during the first stage of labor which lasted two hours and 35 minutes. During this time approximately 75 cc. of blood were lost. The second stage lasted 22 minutes. A living male infant 52 cm. long and weighing 6 pounds 6 ounces (2,890 grams) was delivered by Ritgen's manoeuvre. There was a velamentous insertion of the cord and one vessel ran completely around the amniotic sac in almost its greatest circumference to join the placenta on its opposite side. This vessel was ruptured at the junction of its first and middle-third in its course in the fetal membranes. The mother and baby were discharged from the hospital in good condition on September 21.

#### SUMMARY

A review of the available literature indicates that vasa previa is a rare condition which is seldom diagnosed before delivery. The diagnosis depends upon feeling the pulsating blood vessels within the cervix. In such case, the vasa previa must not be confused with a prolapsed cord. It should be thought of in cases of bleeding in labor or late in pregnancy, especially if the bleeding occurs when the membranes rupture or when there is a multiple pregnancy. However, the exposed vessel or vessels may rupture before the rupture of the fetal membranes. The prognosis for the fetus is extremely

grave. There is no added risk to the mother except that due to obstetric operations undertaken under a mistaken diagnosis, or in an effort to save the infant. In the event that the diagnosis is made before delivery, any change in the management of the case should be undertaken solely in the interest of the baby.

Two cases are reported, one with and the other without rupture of the blood vessels. In both cases labor was induced at term by amniotomy without the condition being suspected. One mother was delivered by version and extraction and the other by Ritgen's manoeuvre. Both mothers and both infants made uneventful recoveries.

#### ADDENDUM

Since this paper was submitted for publication we have had a third case.

A 32 year old gravida V was sent into the Johnston-Willis Hospital September 30, 1944, on account of edema and high blood pressure. Family history and personal history were negative. She was due by Naegeli's rule on October 17. The present pregnancy had been normal until about the first of September when she began to have swelling of the legs and face. Her blood pressure was 180/120; urine was free from albumen; heart and lungs were normal. The cervix was one-half inch thick and one and one-half fingers dilated. The head was in LOA position and well engaged. The membranes were ruptured artificially. After a latent period of 2 hours and 29 minutes, and a labor of 3 hours and 27 minutes, the patient was delivered with low forceps of a male child 51½ cm. long. The anesthesia consisted of sodium amytal grs. 6, hyoscine grs. 1/100, open drop ether and pudendal block with 1 per cent novocain. The baby cried immediately. The placenta was delivered 2 minutes later with an estimated blood loss of 60 cc. There was a velamentous insertion of the cord and two umbilical vessels ran a distance of 16 cm. in the membranes before entering the placental tissue. Between these vessels and the placenta was the rent in the membranes through which the baby was delivered.

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## OBSERVATIONS ON COMBAT PSYCHIATRIC CASUALTIES\*

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and

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From the experience of the Neuropsychiatric Service, U. S. Naval Hospital, Portsmouth, Virginia, some isolated, and at points unconnected, observations concerning the syndrome of "combat fatigue" will be presented. These observations are based on a two-year experience with a considerable number of cases, and with follow up reports on a relatively large group.

It should be said immediately that these cases are almost entirely limited to seaborne troops. In this connection, it must be remembered that there is a wide variation in this comparable syndrome as seen in land troops and as seen in seaborne, or airborne, troops. Points of difference, therefore, from reports of those who have studied this emotional disturbance in marines and soldiers are more apparent than real, since we are dealing with a related, but not identical, syndrome.

There are several important factors that alter this syndrome as seen in different classes of troops. In airborne and seaborne troops, the supporting structure of a group of men fighting together is much stronger than in the infantry. At the same time, the threat of total destruction, rather than mere wounding, is much greater in both seaborne and airborne fighters. Ground troops are rarely exposed to the isolation and restriction in activity which is forced on seagoing men. Ordinarily, in ground troops, a dead buddy is simply a corpse left behind in the advance or retreat of the Army, but in a Naval action, as in an air action, men may be confined for long periods with the mutilated remains of their closest friends, or may be exposed to the heart rending cries of the wounded or drowning, themselves helpless to assist, or may perforce struggle for their lives in oil covered waters with panic stricken buddies whose fight to live threatens the existence of their shipmates. The attachment of man to his in-

strument of transportation has long been recognized. This emotional attachment to an inanimate object reaches a high degree in airborne troops, and in seaborne troops becomes so intense that the ship may be considered a love object whose loss is a potent agent in the production of emotional symptoms. Such varying factors must be taken into consideration at every phase of management of combat induced emotional disturbance.

So much has been written and said on the subject of combat psychiatric disorders that a foremost question in the minds of many civilian psychiatrists is, "Just how much of a problem is this syndrome in the fighting forces?" We can give you only a very small part of the picture, and certainly these remarks should not be applied to the over-all Navy, and even less to the over-all Army, problem of combat fatigue. The release of actual figures is not permitted for security reasons, but, as a large Naval hospital receiving patients from the Atlantic, the Pacific, and the continental limits of the United States, we can tell you that this is not a problem of first magnitude insofar as the hospitals are concerned. By far the majority of the work in Naval hospital psychiatric services remains the rapid disposition of military ineffectives whose disabilities are constitutional or parent-bred rather than combat induced. Attention is invited to the fact that we are not reporting on front line casualties, or on the over-all discharge rate from the Navy, or the prevalence of this disability in other groups which will be mentioned later, but that we are simply stating the limits of the problem as seen in a continental Naval hospital.

It should be remarked that the class of combat cases encountered varies in almost immediate proportion to the grade of stress placed on the Navy's fighting force. As stress increases, a higher percentage of our emotional disorders are combat induced in men of previously stable personalities. The duration is short, and recovery is almost inevitable unless it is delayed by family, friends or therapist. As war stress lessens, constitutional inadequacy rises in the admission rate and true combat fatigue

\*Read before the Neuropsychiatric Society of Virginia at Williamsburg, November 9, 1944.

The opinions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

From the U. S. Naval Hospital, Portsmouth, Va.

declines. This is a point too often overlooked in discussions of combat fatigue, and it must be remembered constantly that experience over a three or six-month period may be radically modified by experience in the next three to six months.

It previously has been reported<sup>1</sup> that in the production of the symptoms of combat fatigue, four factors, other than the patient's personality and the degree of stress applied, are commonly seen. These were noted to be: (1) absence of confidence in leadership; (2) insufficient training; (3) inadequate group support caused by entering combat with a new unit; and (4) physical fatigue. When analyzed, these factors are primarily those which increase a man's sense of personal fear and render it possible for him to break under stress which he might otherwise have borne and which does not necessarily break those about him. In any effort to chart the values entering into the production of symptoms, these factors must be carefully weighed on equal terms with the stress and the personality, inasmuch as they determine the effectiveness of the former and the ability to endure of the latter.

Combat fatigue in seaborne troops is usually of insidious onset. Exposed to constant alerts, submarine and air attacks, and actual shooting engagements, the men gradually develop a hair trigger response of the physiological concomitants of fear. A mild degree of startle reaction appears and perhaps a few nightmares. Almost imperceptibly, a low-grade emotional depression occurs, and with it emerge the physiological accompaniments commonly seen with any depression: irritability, hostility, difficulty in thinking, fatigability, myalgia, poor appetite and disturbed sleep. None of these are marked and such symptoms are so common aboard ship that neither the man nor his shipmates consider him ill. This might be known as Grade A, or ambulatory, combat fatigue. For practical purposes, the victim's fighting efficiency is not impaired; if anything, it is somewhat heightened by his over-ready response to alarm signals and to danger. At this stage of the illness the patient may complain of some dizziness, or may report to the sick bay with vomiting, diarrhea or insomnia. Here ordinarily a mild degree of sedation will allow him to continue with his work.

The following is quoted from the actual state-

ment of a combat fatigue patient: "A man who is out fighting the war goes through three stages really. At first he is all anxious to get out there and lick the Japs. Then he gets in first one engagement and then another and very soon he knows that he has had enough. Now, he says, 'I would like to go back and show these people what the war is all about. Now I am a hero and I would like to go home and tell them about it.' After this, though, you gradually get to realize that you are not going back, you are expendable. Then everybody begins to wish that the ship will be hit and that the next engagement will be her last. Everybody on the ship is willing to take his chances on being saved as he feels that it is worth it for 30 days out of the war. When you get really bad, you begin to hope not only that the ship will be hit but that you will be killed, and not have to go home as you begin to find out that you are not like you used to be and wonder if you are nuts." This is an unexcelled description of the development of ambulatory combat fatigue.

From Grade A (or ambulatory) combat fatigue, three courses are open to the patient. First, and ideally, he may be removed from the combat zone and have his symptoms leave him gradually over a period of two to three months, without outside help. Second, his symptoms may continue in their slow progression until he is no longer able to carry on, and must be hospitalized. This occurs in a relatively small percentage of Naval forces suffering with combat fatigue. Third, he may be exposed to sudden emotional wracking which crystallizes the entire picture and precipitates, almost catastrophically, the onset of disabling emotional disturbance. Such a catalytic event may run the gamut of emotional trauma in magnitude, varying from the actual sinking of the man's ship, with great loss of life and urgent threat to himself, down to an anonymous letter from a neighbor informing him that his wife was out with a soldier last Saturday night. Since soldiers are land based and neighbors are unkind, the latter event is at least as common as the former.

It is manifest that the cases we see in hospital have followed course two or course three. In hospital, then, the symptoms of this disturbance fall into two large groups, with a subsidiary third. The first group are those symptoms directly attributable to the unstabilized physiological response to fear, and include the startle reaction, to some extent the nightmare, and some of the somatic complaints,

1. Raines and Kolb: Combat Fatigue and War Neurosis, *U. S. Nav. Med. Bull.* 51:923-936, 1299-1309, July-September, 1943.

such as dizziness, bad taste in the mouth, diarrhea, or a "feeling that the stomach has shrunk". The second group are the earmarks of any depression, regardless of its cause, and consist of fatigability, broken sleep, irritability, hostility, lack of interest, sexual impotence, poor appetite, and so on. The third group are those directly related to the condensation of the affective turmoil around an emotionally traumatic event, and concern themselves with projection against families, or officers, or the Navy as a whole, with no more rhyme or reason than is usually seen in projection mechanisms. These, as mentioned, are not primary, but follow, and are secondary to the other two groups.

Our views on treatment have been previously reported.<sup>2</sup> We believe in the abreaction of emotionally charged memories, in group living by schedule, and in group psychotherapy for more superficial complaints. We do not believe in sole reliance on group therapy, and we do not believe in extensive exploratory psychotherapy in any form during the acute illness. Although we frequently use sleep therapy for a period of 5 days, and occasionally use narcosynthesis or hypnosis, we regret that our results with these methods have not been comparable to those reported, probably because of a difference in the type of case handled at our hospital.

We have seen too many patients in whom the "Grade B" degree of combat fatigue was precipitated by minimal emotional trauma to believe that it is wise to perform exploratory psychotherapy on this group of patients. While these men are acutely ill, we would hesitate to raise into consciousness those repressed drives and conflicts which go to make up

the normal personality. Any method of therapy under which a patient has recovered in three months cannot be assumed without proof to be responsible alone for the recovery, inasmuch as the course of this disorder is steadily towards recovery and the time required for evidence of beginning cure is approximately two or three months. Methods, therefore, which do not shorten this period of treatment must be required to furnish their own proof that the therapy has aided in the recovery. Methods which require more than three months for the cure of uncomplicated combat fatigue must be regarded with considerable suspicion as to their efficacy.

We have pointed out that "combat fatigue" is no great problem in continental Naval hospitals today. We do not mean to imply that ambulatory, or "Grade A", combat fatigue is not a much greater problem and one which will have to be faced before demobilization. It is extremely distressing to hear the agitation for quick demobilization of combat troops. Those families who urge and request such rapid methods are begging for their own destruction. Aside from all non-medical views, a slow demobilization of combat troops will be essential if we are to avoid the fixation of neuroses in a large number of men.

We are confident that ambulatory combat fatigue of the type described above is extremely common in men who have been exposed to combat action. Under the best of circumstances we may expect late casualties to occur after war's end, but these should be kept to a minimum by proper handling of combat troops at the time of demobilization. This appears today to be the urgent problem in combat fatigue and one which must be faced by Army, Navy and civilian psychiatrists together.

2. Raines and Kolb: Treatment of Combat Induced Emotional Disorders, *Am. Jour. Psych.* 101:3, November, 1944.



# Medical Society of Virginia Cancer Committee

Room 383, Medical School Building, University, Virginia

May 1, 1945

## Rectal and Prostatic Carcinoma

A patient referred for treatment of hemorrhoids to one of the hospitals certificated by your Committee to care for indigent cancer patients was found, on rectal examination, to have, in addition to hemorrhoids, an easily palpable carcinoma of the rectum. According to the patient, a rectal examination had not previously been done. Two other patients presented themselves at clinics in these hospitals because of rectal bleeding which persisted after hemorrhoidectomy. These patients had actually had hemorrhoidectomies without rectal examination! Both had carcinomas of the rectum in easy reach of the palpating finger.

The digital rectal examination is just as essential a part of a physical examination as a blood pressure determination. The physician who omits it does justice neither to his patient nor to himself. He become unskilled in its interpretation, and through habitual neglect of the rectum, commits such absurd oversights as those described above. To limit one's examination, in the presence of rectal bleeding, to inspection of the anus is as ridiculous as to be content with inspection of the lips when confronted with hemoptysis.

*Age Incidence of Cancer of the Rectum:* highest in 6th decade, but over 4% in 3rd decade, and an occasional case in persons under 20.

*Early Symptoms:* (1) Sudden change in bowel habit  
(2) Bleeding from the rectum  
(3) Mucus  
(4) Pelvic pressure

*Diagnosis:* (1) Digital palpation (60% of early cancers can be palpated)  
(2) Proctoscopic examination  
(3) Biopsy  
(4) X-ray barium enema, if necessary

*Treatment of Early Cancer of the Rectum:* Colostomy and resection of the rectum. Radical surgery in an early stage of the disease is the only hope of cure.

It has been estimated that at least 20% of men who live beyond the age of 50 develop cancer in the prostate. Only those have a chance for cure who are fortunate enough to have their lesion discovered early while the growth is still confined within the capsule of the gland. In males, routine digital examination of the rectum has the tremendously im-

portant advantage of affording opportunity to palpate the prostate. This is the *only* way to discover prostatic cancer early. *By the time any symptoms have developed, the growth has practically always broken through the capsule*, limiting treatment to palliative measures. Therefore, general practitioners who make it a habit to do a rectal examination on all their male patients beyond the age of 50 are usually the only ones who discover early carcinoma of the prostate. Unfortunately, routine rectal examinations are so frequently omitted that few patients are seen by the urologists before extension and metastasis have taken place. Encourage your male patients over 50 to have a physical examination at least once a year, and palpate their prostates carefully for firm nodules or areas of induration.

*Early Symptoms of Prostatic Cancer:* None.

*Diagnosis:* Digital palpation—on slightest suspicion refer your patient to a competent specialist for complete study.

*Treatment of Carcinoma Confined Within the Capsule of the Prostate:* Depends on life expectancy. Complete removal of the gland offers the only hope of cure. When the prostate is completely and properly removed, in the absence of metastases or extension, the prognosis is good.

Many persons who have died of carcinoma of the rectum and carcinoma of the prostate might have been saved by early diagnosis and prompt surgery. Since a number no doubt died of these diseases undiagnosed and others were probably not reported, our statistics are incomplete, but in 1943, 83 deaths from carcinoma of the rectum were reported in Virginia, 131 from carcinoma of the prostate, a total of 214.

**USE YOUR FINGER TO REDUCE THIS FIGURE!**

**PLEASE NOTE:** In the March bulletin, "The Biopsy," there is a typographical error. The first sentence of the second paragraph reads: "A man in the cancer age, on a clinical diagnosis of cancer, received antileptic treatment for a persistent sore on the lip." This should read as follows: "A man in the cancer age, on a clinical diagnosis of *chancre*, received antileptic treatment for a persistent sore on the lip." Please make this change on your copy.



## MEDICAL PROBLEMS IN A CHANGING WORLD\*

LINWOOD D. KEYSER, M.D.,  
Roanoke, Virginia.

You have seen fit to give me the distinction and the responsibility of becoming your presiding officer for the ensuing year. In doing so you have conferred upon me a great honor, a privilege and a trust for which I am deeply grateful. Let me express to you, with mingled feelings of pride and humility, my sincere thanks.

My address will be brief and not on a scientific subject. Perhaps I would do better with such a discourse but the time and the occasion are not for this. We live in a world of flux, our civilization is being recast, and we see the old order evolving into something new which, whether better or worse, will certainly be different. Biology teaches us as one of its fundamental principles that any species which does not adapt itself to changing conditions will definitely, sooner or later, cease to exist and become extinct. Political and sociologic systems over the ages have likewise followed this law. In our own generation we have seen the practice of medicine change in the locale of its activity from the bedside at the patient's home to the laboratory, to the well equipped office, to the organized clinic, and above all to the modern well-developed hospital. We have individually and severally adapted ourselves to this change and medicine has progressed.

Now the environment changes again, and rather quickly too, and a new set of conditions confront us. We are at war. The exigencies of the moment are met with extra, and often exhausting effort. With lack of colleagues, nurses, house staffs, technicians, orderlies and domestics, without complaint we should and we do carry on. Yet as average doctors in an average American community we cannot be blind to certain challenges that the new order of the post-war world will shortly bring. The development of medical centers supplied by State and Federal agencies or foundations, the activity of many industries in affording medical care to employees and their families, the encroachment of public health agencies upon certain phases of medical practice, the regimentation of doctors in the armed forces, the growing resentment of the public to the

so-called high cost of medical care by private physicians when fees for laboratory and specialist consultations become pyramided to an unseemly figure; these things are already with us. As we look ahead to those days when peace shall come again, these innovations in our system of medical practice will, whether we like it or not, be further developed and constitute a challenge to certain ideals which we in America have long held sacred.

While not expressed in our national constitution the right of each individual to choose the person who is to treat his bodily ills and to counsel him with regard to his health, and to keep in trust his confidential communications, comes almost next to his right to choose his religion. We prize this ancient physician-patient relationship and rightfully so. It is the heart, the keystone, the fundamental spirit of our medical system.

Now to the point. Can we meet the demands of our modern social evolution and maintain this time honored right of choice of physician? Yes, I believe we can, but not without strong effort and co-ordinated and cooperative planning. As you know, I am not an economist nor an organizer; neither am I presumptuous enough to propose a specific plan. However, I am keenly aware of one fact. If the organized medical profession does not act, State and Federal agencies will do so. Furthermore, their plans and specifications economically, sociologically, and professionally, will not be to our liking, nor, what is more important, will they be to the liking of the public which we are to serve.

What are these demands that are being made for medical care at the present time and during the post-war period? First, an adequate supply of well-educated physicians and medical specialists with their relative location or relocation according to the population in definite geographic areas of the United States. This factor is covered most comprehensively by J. W. Mountin, of the United States Public Health Service, in a current issue of the *Journal of the American Medical Association*. The gist of Mountin's observations are that since the beginning of the century fewer physicians settle in rural areas or in areas of low income, where lack of essential

\*Presidential Address, Roanoke Academy of Medicine, Roanoke, October 2, 1944.



facilities such as well-organized hospitals and professional isolation are handicaps. In other words, the young physician tends to locate where community income is higher, where adequate hospital facilities are available and where he may have professional contact with colleagues well trained in the specialties.

This natural and even worthy trend has been aggravated by the fact that about one-third of the physicians of our country are now in the armed services, and that, due to a much criticized policy of the draft administration, only about one-third of the normal 5,000 per year supply of new graduates is being supplied by our medical schools. As a consequence, many areas of the country have and will have an inadequate supply of doctors. Not a few larger areas have none at the present time.

The great opportunity for mass relocation of physicians will come after the war. A large number of physicians in military service will never have been in private practice and those who have been, will have been absent for such a time that resuming practice will be essentially the same as starting anew. Just how many medical officers will be released from the armed services and how soon they will be released are questions concerning which little information is given by governmental circles. How many men will be induced, persuaded or compelled to remain in the army, navy and rehabilitation centers at home and abroad during the next ten years is enigmatic. We may make certain, however, that the percentage to be employed by the government in such projects will be not an inconsiderable percentage of the whole. We may make equally certain that the policy of the administration in power will be one of attempting the control of relocation of these doctors in some definitive and equitable geographic manner.

A second demand to be made on our profession is a program for better coordinated activity between the private medical practitioner and the State and Federal public health agencies. We have accepted as essential and expedient the State care of the insane, of the tuberculous, its control of community sanitation. State laboratories have taken over in large measure the serologic, biologic and bacteriologic examinations formerly done in hospitals and private laboratories. Prenatal, maternity, post-natal, pediatric, orthopedic and many other types of clinics

under health department supervision have come into being and their zone of activity constantly spreads. Programs for the health examinations of school children, their teachers, the examination of food servers and of industrial workers go *pari passu* with the tabulation of vital statistics. While such examinations are for the most part made by private doctors, strong inferences and even activity in outlining the therapy are given for those not meeting certain health standards.

To our present endemic and epidemic diseases with which the Federal and State health services have properly concerned themselves, will shortly be added tropical and other exotic diseases brought home by returning troops and augmented by a newer and more frequent travel relationship between peoples from remote areas of the world. How far will health agencies go in the control of such diseases, and how much of the program can be or will be given to the medical practitioner? We have as a rule yielded and not reluctantly to the health service diagnosis and prophylaxis of preventive disease. We have not been so eager to yield to the State the therapy or treatment of this category of medical problems.

If one reads, as each of us should, the July 22nd issue of the *Journal of the American Medical Association*, the evidence of our national physical fitness revealed by Col. L. G. Rowntree on the basis of 13,000,000 physical examinations of selective service registrants over a period of nearly four years, one finds that the state of the nation so far as the health of its youth is concerned is not one of which we can be proud. An approximation of the truth from a legion of rather embarrassing statistics, is that about 50 per cent of the selectees have been found unfit for service, if measured by the standards in use at the beginning of the war. May I quote a few lines from Col. Rowntree's report? "Not only do the defects, deficiencies, disabilities, disorders and diseases abound, but, in addition, many of the registrants were found to be pampered, soft, flabby and in need of conditioning. Special training in physical fitness was necessary, after induction, which represented weeks of wasted time and effort which could have been avoided if every young man prior to induction had made himself physically fit.

"Lack of physical fitness prevailed among the youth of the country because the nation failed to

recognize its importance and because youth itself failed to earn fitness. \* \* \*

"Physical fitness is a matter of development." It "is the bodily state which combines maximum power and efficiency, with the minimum time for recovery after exhaustion. It cannot be acquired overnight. It is a matter of evolution."

So important loomed the problem that, in 1943, the President created a national committee on physical fitness under the Federal Security Agency. This committee is at present at work with plans which again we may make certain will have to do with the private practice of medicine and the conditions under which it is done.

Along with such exact statistical evidence from what should be the most hardy element of our population, viz., our young men and women, we turn to our general civilian population of all age groups. We recognize at once the obvious physical and mental retardation of inhabitants of certain mountain and rural districts and in our city slum areas. Even our own centers of indigency and poverty within the relatively healthy city of Roanoke are known to us and recognized as the homes of the sociologically and physically unfit. In spite of our oft vaunted medical progress, in spite of the repeatedly emphasized increase in longevity, in spite of therapeutic miracles brought about by such medical progress under our private system, we are confronted with the fact that disease, illiteracy, ignorance and physical unfitness are still all too abundantly with us.

From such a background certain elements of our population, with the encouragement of our national administration perhaps, feel the need for a thorough reorganization of medical practice, this with a view to providing medical care, preventive, diagnostic and therapeutic for all, with rehabilitation, health education and physical fitness thrown in. This is the challenge that confronts us as private practitioners and one which, if we are to maintain our status as private practitioners, we will have to meet. If the organized medical profession fails to meet such a challenge, make sure again our national government can and will meet it for us in a manner which will be distasteful to us as doctors, and even more distasteful to the mass of the people who constitute our patients.

Now, let us examine the program of the government which presents itself under the title of "so-

cialized medicine". The program at present has many variants but these variants all seem centered about one chief principle, viz., the domination of medical care, its administration and compensation by the United States Public Health Service and its financial support by some form of taxation. Let us listen to Dr. Thomas Parran, Surgeon General of the United States Public Health Service, addressing a Senate committee on July 12th of this year. He approaches the question cautiously, perhaps not desiring to offend the medical profession. None the less his stand is positive.

"It is my belief that we can have a national health program fitted to the nation's needs and the social and economic problems of the 48 states, not entirely with socialized medicine but not with more private medical practice than we now have."

He outlined a plan for 417,000 hospital beds and 2,400 health centers and sub-centers costing \$1,989,000,000, not including the health needs of veterans, which he said the nation must have to get on a sound basis.

"As our knowledge increases," he said, "the need grows for putting this complex science (research, diagnosis and treatment) to the service of the people by groups of trained persons working as a team. The day of the country doctor of the saddle bags is past. Public health is the paramount public concern of our modern society."

Parran advocated an integrated system of public health service beginning with health centers in every community feeding general and specialized hospitals. He said that prepaid insurance plans, such as the Blue Cross, strongly advocated to the Senate committee by Dr. Claude W. Munger, of the American Hospital Association Council on Government Relations, "do not seem applicable to the large low income groups" which constitute the "major financial burden on voluntary hospitals."

The most definite scheme proposed, one which goes beyond what the Surgeon General is willing to demand at the present time and which represents the ultimate goal for socialized medicine, was introduced, in a Senate bill, by Senators R. F. Wagner and Jas. Murray on June 3, 1943. Through taxation under the Social Security system a compulsory health insurance is proposed. From this *free* general medical service, special medical, laboratory and hospitalization benefits are to be offered to more



than one hundred and ten million people in the United States. To the Surgeon General of the Public Health Service would go the power and the authority, (1) to hire and establish rates of pay possibly for all doctors; (2) to establish fee schedules for services; (3) to establish qualifications for specialists and to have the responsibility of designating them; (4) to determine the number of individuals for whom any physician may provide service and (5) to determine arbitrarily what hospitals or clinics may provide service for patients. From a 6 per cent employer paid and 6 per cent employee paid tax on wages paid up to \$3,000 per year, from 7 per cent on income of individuals, self employed, up to \$3,000 per year, and from a  $3\frac{1}{2}$  per cent tax on Federal, State and municipal employees, twelve billion dollars per year would be raised. From this sum, for medical care and hospitalization about \$3,000,000,000 per year would be allocated.

In fairness to the bill, it does provide that any physician qualified by a State may furnish medical service, and every individual may be permitted to select his own doctor or to change his selection, but it is carefully noted that this shall be done only under such rules and regulations as may be prescribed by the Surgeon General. A plan for the utilization of present established hospitals under the term of "participating" hospital is provided. This selection is again determined by the Surgeon General.

The Wagner-Murray bill will probably never be enacted into law, but it does constitute the first "blue print" of the governmental objective. In its philosophical concept and mechanics of administration it is truly totalitarian and means the ultimate regimentation of our profession. What would be the picture of medical practice under such a system? First, the Surgeon General becomes a supreme all out commander, a medical dictator or czar; second, the right of the patient to choose his physician will be so curtailed that after a time it will become a lost privilege; third, political influence in selection of physicians will appear and the incentive for progress in practice by individual effort to establish confidence with patients and with medical colleagues directly will be suppressed to such an extent as to become relatively non-existent. Fourth, the patient—and after all this is the most important party concerned—will suffer, all too frequently, from ill-

timed, impersonal and indifferent care. His status, so far as State employed doctors are concerned, might become little if any better than that of the average dispensary or hospital free ward patient under our present system. Furthermore, those little confidences that exist between the patient and his physician will consistently become a matter of record in governmental files open to inspection by all.

Now we as individual physicians are concerned first with the diagnosis and treatment of disease in individual patients. As a group we are sponsors of the public health and of the physical, mental and, to a great degree, of the moral welfare of our nation. What have we done, what are we doing and what must we do to meet the conditions that have given rise to a demand for socialized medicine? How are we to avoid the possibility of becoming cogs in a political machine? I would, with my limited and inadequate background, be presumptuous to offer any detailed solution of this problem. However, it is within my province as president of a local society in this period of our changing economic life to bring these facts again and again to your attention. I will essay to go further and to express a few personal impressions as to certain principles of possible action. First of all, we should familiarize ourselves with the problems at hand and study the activities of agencies which may destroy private practice. *We must, above all, give thought and expression to plans which will meet the care of the indigent and answer the demands which State medicine proposes to satisfy.* We must encourage voluntary health and prepayment hospital and medical service insurance. Second, our delegates to the State and national societies should be encouraged to study with other delegates from similar societies the medical needs of the nation at large. There is need for development of a better feeling and more coordinated planning between the American Medical Association, the United States Public Health Service and the Federal Government.

From reading the press, both medical and general, one senses the fact that during the past ten years there has grown up a feeling of antagonism between the American Medical Association and the government. Federal courts, at least in one instance, have held our organization to be a union in restraint of trade and have imposed a fine therefor. This impression must be corrected. The people and their



government must be shown that the American Medical Association is a democratic organization of doctors, a body which has evolved from many such organizations from the time of Hippocrates over the centuries to the present day. It is a group of colleagues with a purpose of controlling medical practice in such a way as to bring the humanitarian principles of medicine in the light of progressive science to the population at large, and this in the most efficient manner possible. The record of the American Medical Association and its affiliated bodies during the past fifty years in achieving these ideals to a surprising degree must be impressed upon the public.

Third, while insurance for medical and hospital care is growing and will cover large groups it will not meet the requirements of many, such as the ignorant, the indifferent (and this is a very large class) and the indigent. Taxation to defray expenses of medical care for the poor and for low income groups may be evolved as a method of compulsory health insurance superior to a voluntary system. However, this evolution should be controlled not by the government alone but by the government in co-operation with the medical profession. The doctors, and not the politicians nor any single political appointee, should lead the way and establish the principles of conducting national medical care. Our chief task will be that of educating the people, for it is what the mass of the people demand that will ultimately prevail. Such education cannot be conducted by brief conversation with individual patients. The press, the magazines, the radio and civic clubs must be used to enlighten the public and its political representatives as to the dangers which socialized medicine will bring in prohibiting individual choice of physicians and in affording inferior medical care.

Mass treatment of groups of peoples collectively is never satisfactory. Under such a system the patient is ticketed and billeted somewhat after the manner of an animal in the stock yard. His personal feelings about himself or his family would have about an equal opportunity for expression. State medicine can offer little to take care of those little temperamentalities, emotional characteristics and the little individual niceties which we express by the word personality, all of which we know to be so important when we as private practitioners deal with the individual case. Under any system of

mass medical practice the individual's very individuality must of necessity be submerged.

I was pleased to read Dr. Wyndham Blanton's recent survey of the problem in a recent issue of the *Commonwealth*, the official organ of the Virginia State Chamber of Commerce. More such articles are needed. Now, for good reasons, I am sure, the National Physicians Committee for the Extension of Medical Service, was founded as an organization separate from the American Medical Association to help us in dealing with this problem. This organization represents the coordinated opinion of the members of the American Medical Association in great part and it should be supported. We are periodically receiving its literature. I am glad to see that the Committee urges us to distribute its pamphlets to civic organizations and to enlighten our political representatives as to its purposes. The growth of such an organization may be a powerful influence in helping us as a profession to keep our dignity and to assure the American patient that he will reap the benefits of continued medical progress.

Let me repeat: Any program which the medical profession may present should be devised by representatives of this profession through its recognized agency, the American Medical Association, this in coordination with governmental agencies. Cooperative committees from these bodies could make a survey of local and State needs for medical care. Certain centers could have local, State or governmental hospitals supported in part or in whole by government aid. Staff appointments to such institutions could be made from licensed practitioners, their specialty and consultant ratings being determined in accordance with standards prescribed by the American Medical Association and its affiliated societies or certifying boards. The patient should have his choice of doctor, within the limits of this physician's qualifications as a practitioner or specialist. Insurance compensation should be accepted as total or partial payment for professional services as determined by local society action or by agreement between the patient and physician. The physician should continue to have the right to refer his patients to colleagues of their mutual choice for consultation. Physicians and not political agencies should have predominant influence in making appointments of medical personnel in the organization of staffs of hospitals and clinics. In the hands of

the physician should continue to rest matters of regulation of practice and of discipline when necessary.

These are some ideas that occur as one reflects upon the problem. Doubtless many of them are impracticable. Perhaps some of them are not even necessary. But we must start thinking and giving expression to our opinions. The time for action of the medical profession is at hand. We doctors are all too conservative and have in our organizations throughout the centuries conducted our proceedings with dignity and the avoidance of exhibitionism before the public. This is as it should be, but when

an incubus comes which threatens to destroy this very feature of professional conduct, we can hardly afford to sit back in smug complacency and see our system of practicing and of professional living undergo disintegration. Rather we should, we must, we can meet the demands of a changing world and show the public a better and happier solution to its health problems than any plan of Federal regimentation of physicians can possibly offer. This is the task that lies immediately ahead for the American medical profession.

*909-11 Medical Arts Building.*

### **Educational Opportunities for Army Doctors.**

Since the start of World War II, over 6,000 selected medical officers have been graduated from short but intensive courses given by the Medical Department in some thirty critical medical and surgical specialties, according to Major General George F. Lull, Deputy Surgeon General. In addition, refresher courses in general medicine and surgery provide medical officers with a chance to "brush up" before returning to professional assignments after other duty.

Many doctors also benefit while in service from working under key professional personnel in military hospitals. Other medical officers who have been on duty with combat troops in the field are given an opportunity to brush up on their specialty through the rotation policy.

General Lull reported that 350 doctors have been reassigned from field to hospital duty during the past year in the Mediterranean Theater and "the merit of intra-theater rotational plans has been pointed out to other theaters, and is being encouraged in order that the maximum number of doctors might receive refresher training while they are still in military service."

Naturally, professional training of medical corps officers during military service must be restricted to meet military rather than civilian requirements. However, General Lull said, The Surgeon General

is keenly interested in the welfare of these doctors and will provide "insofar as is possible" opportunities for professional training.

In the post war period, he added, all doctors will be entitled to professional training, after their release from service, under the G. I. Bill of Rights, and those who remain in the Army will have the opportunity for refresher training at selected military hospitals and civilian schools.

### **New Type Ambulance.**

An improved ambulance, which will carry twelve instead of four litter cases in greater comfort, has been developed at the request of The Surgeon General by the Ordnance Department in collaboration with the Army Medical Department. By May 31 twenty-five of these new ambulances will be carrying casualties from ships and planes to Army Hospitals.

The new ambulance has an aluminum body with a front wheel drive which allows the bed of the truck to be placed lower, making it easier to move patients in and out. It is smoother riding than the old type and provides such refinements as a heater for use in cold weather, roof ventilating fans to keep the air fresh, window shades to provide privacy in traffic and individual electric lights over each litter. There are ample compartments for bedding and utensils. A comfortable seat is provided the attendant next to the driver. Both sit enclosed with the patients.

## PAROTID DUCT FISTULA— REPORT OF A CASE WITH A SIMPLE METHOD OF TREATMENT

C. I. SEASE, M.D.,  
Richmond, Virginia.

Mr. F. L. P., white, male, married, age 43. This man came to my office during June, 1925, complaining of a small tumor of the right cheek. Examination revealed a rounded tumor about three-quarter inches in diameter and which was freely movable just beneath the skin located about one inch in front of the lobe of the right ear. The tumor was painless and had been present for several years. It had not increased in size noticeably for the past year. Thinking it was probably a small sebaceous cyst it was removed under novocain anesthesia in the office. When the tumor had been almost completely removed, it was found to have a dense fibrous attachment deep in the cheek which had to be cut with scissors. The wound was closed with skin sutures.

After the patient had gone, the tumor was examined more carefully and was thought to be a cyst of the parotid gland involving the proximal end of Stenson's duct. This operation was done about 9 P. M., and the patient appeared early the next morning after breakfast with the statement that there was a great leakage of fluid from the wound which ran down over his cheek, neck and shoulder while eating breakfast. There was no doubt then as to the diagnosis.

The different procedures for treatment of a fistula of Stenson's duct did not appeal to me as desirable under the circumstances, as they mostly involved

major surgical procedures, especially of a fistula located as this one was—in the masseteric portion of the duct,—so the following simple procedure was attempted and succeeded beyond all expectations. The procedure was as follows:

Stenson's duct was first dilated with small silver probes. After three or four days I had an eye drilled in the end of one of the silver probes. The probe was passed from within the cheek outward through the fistula. A strand of silkworm gut was threaded through the eye of the probe and a tight knot tied about two inches from the end of the probe. The ends of the silkworm gut were cut close to the knot. The probe was then withdrawn, bringing the silkworm gut strand into Stenson's duct and the knot into the wound. The silkworm gut was then cut from the probe leaving about one-half inch extending inside the cheek. The fistula was then closed with fine silk.

There was no further leakage of saliva from that time on. After a week the fistula was healed firmly, so, with some misgivings, the silkworm gut was pulled out of Stenson's duct, the knot coming through fairly easily. The patient is well to this day—twenty years after the operation.

No originality is claimed for this simple procedure but I have not seen it described elsewhere.

*505 Professional Building.*

### Favorable Reports on Trench Foot.

Reports from the Army general hospitals at Camp Butner, N. C., and Camp Carson, Colo., which are trench foot treatment centers, indicate that the cases now under treatment are for the most part mild. Lieutenant Colonel Roy H. Turner, MC, Acting Director, Medical Consultants Division, Office of The Surgeon General, who recently returned from an inspection trip, stated that, with the exception

of a very small percentage of cases, evidence of injury to the feet is slight and recovery is both rapid and exceedingly satisfactory.

The mildness of trench foot cases now being hospitalized is largely due, in the opinion of Colonel Turner, to the Army's intensified education of troops concerning trench foot which has resulted in the prompt reporting of cases, early diagnosis, and immediate treatment.



## LOBAR PNEUMONIA—ANOTHER ETIOLOGIC VIEWPOINT

HOLCOMBE ROBERTSON, M.D.,  
Richmond, Virginia.

Three diseases of man are so similar in some of their characteristic symptoms that a similarity in etiology is suggested. The diseases are malarial fever, relapsing fever and primary lobar pneumonia.

The symptoms referred to are:

1st: The prolonged, severe chill.

2nd: The rapid rise in temperature to 104 F., or higher.

3rd: The continuous high fever throughout the paroxysm, or the disease—a few hours in malarial fever, four to ten days in the other two diseases.

4th: The rapid or critical fall in temperature to normal or below at the termination of a cycle or of the disease.

5th: The marked labial herpes.

6th: The comfortable state of the patient after the crisis—for the duration of the apyrexial period in malaria and relapsing fever, permanently in lobar pneumonia.

In malarial fever and in relapsing fever these phenomena are associated with definite phases in the life cycles of known protozoal organisms. Their sudden appearance in the blood stream, their continuance therein, and their disappearance into a known and an unknown tissue, respectively, for purposes of further reproduction, are understood in large part.

In lobar pneumonia these symptoms are equally as striking as in the other two diseases. Our universal belief is that in this disease the characteristic phenomena are due to the pneumococcus acting as a pathogenic organism in lung tissue. We maintain this belief in spite of the following recognized facts:

1st: The pneumococcus, acting pathogenically in other tissues or organs of the human body, produces no such explosive train of events as is seen in lobar pneumonia.

2nd: There is no known product of the pneumococcus which may account for the symptoms in this disease.

3rd: The pneumococcus is a harmless parasite in the respiratory tracts of a large percentage of human beings.

4th: The pneumococcus is absent from the sputum in many cases of lobar pneumonia.

5th: The pneumococcus is absent from the blood in the larger percentage of cases of this disease.

6th: The presence or absence of the pneumococcus in the sputum and/or the blood is the same after the critical fall in temperature as before, yet the patient goes on to recovery.

7th: No bacterial disease is associated with the phenomenon known as the crisis (lobar pneumonia for the present excepted).

8th: It is not possible, nor is there a reason, thus to question the relationship of cause to effect in any disease of known bacterial origin (lobar pneumonia for the present excepted).

9th: Action based upon the pneumococcus theory of causation has brought forth nothing of value in the prevention of lobar pneumonia over a long period of years.

So it must, in all seriousness, be asked: "What is wrong with this picture? Why the indefiniteness and inadequacy in explaining lobar pneumonia when the pictures in malaria and in relapsing fever are so clear?" The obvious answer is that there must be an error in the accepted belief as to the cause of lobar pneumonia. It is easy to assume that a protozoal organism akin to that of relapsing fever, rather than the pneumococcus, is the cause of this disease. If this were true, the organism would have only one cycle in the human host instead of two or more, as in the other two diseases. It is known that in some outbreaks of relapsing fever 25 per cent of the cases show no relapse. A case of relapsing fever that does not relapse and a case of lobar pneumonia with the respiratory symptoms out of the picture would be identical symptomatically.

Considering lobar pneumonia as a spirochaetal disease, the causative organism would, upon introduction into the human host, seek out the specific tissue in which it could grow—the lung. Having established itself, multiplication would take place in the inter-spaces of the alveolar walls. At the time of maturation—the end of the incubation period—the walls would be ruptured and the air-cells of the affected lobe would be filled with blood. The spirochetes, escaping into the general circulation, would give rise to the chill and initial rise in temperature;

their continued presence in the blood would cause the continuance of the fever; their death at the end of the appointed span of life would bring about the sudden cessation of the fever—the crisis. Ease and comfort for the patient would ensue in so far as this is possible with a large section of the lung functionally inactive. The disease is ended.

The lung pathology is as it must be when the air-cells have been filled with blood which clots and must be removed slowly by liquefaction, absorption, and expectoration. The exudate obtained by lung puncture is at first bacteriologically sterile in most instances. This pathology is entirely incidental to the reproduction of the spirochetes and has little significance in relation to the course of the disease—little more than would the collapse of the same lobe. If the crisis can occur before the host is irreparably damaged by the hypothetical parasite, recovery takes place regardless of the condition of the lung.

The protozoal diseases, generally speaking, are not accompanied by a leucocytosis. They are largely chronic in their nature. Relapsing fever, however, is associated with this phenomenon, as reported by Manson, by Castellani and Chalmers, and by Rogers and Megaw. Lobar pneumonia has a high leucocyte count—often extremely high—yet this alone might not rule it out of the protozoal class.

The local—pulmonary—discomforts in lobar pneumonia are in marked contrast to the absence of such local discomforts in malarial fever and in relapsing fever. There are no local symptoms attendant upon the rupture and destruction of innumerable red blood cells when a new crop of malarial parasites is ushered into the blood stream. The field of incubation of the spirochetes of relapsing fever is unknown, but it is evidently in some tissue or organ not affected to the point of causing physical discomfort in the patient. The choice of lung tissue as the field of incubation in lobar pneumonia predetermines and makes necessary the local discomforts in this disease.

The early occurrence of the crisis is the primary hope in lobar pneumonia. To be able to bring this about artificially is of highest importance. Such an issue would seem possible in a disease of spirochetal origin treated by intravenous or intramuscular medication as is done in relapsing fever, and sometimes in malaria. All older practitioners must be familiar with the many reports of the successful treatment of lobar pneumonia by quinine, given by mouth. It

is significant that a drug specific in one type of protozoal disease should so often have been noted as of apparent value in pneumonia. It would be easier to understand the effectiveness in lobar pneumonia of the sulfa drugs, if these were operating against spirochetes present in all cases of the disease rather than against pneumococci which *are absent* from the blood of a majority of such patients.

The above thoughts apply to primary lobar pneumonia. A slight change in the function, if not in the morphology, of the hypothetical parasite, might give an organism which would act to produce primary bronchopneumonia with its somewhat different symptoms and pathology. Such a close resemblance in spirochetes and in their resultant diseases is seen in the *treponema pallidum* and the *treponema pertenue*—and in syphilis and yaws.

No spiral organism has been observed in lobar pneumonia—if it has been sought. The *treponema pallidum*, it must be remembered, is visible only in the dark field and it is possible that other organisms of this type are even more nearly invisible.

In order to explain the crisis under a spirochetal theory of this disease it is not necessary to assume an immunity. The critical fall in temperature records only the cessation of activity in a group of spirochetes when the one and only cycle of life has ended. Under a pneumococcus theory of causation an attempt to explain the crisis as the sudden attainment of an immune state must ignore the following facts:

1st: There is no immunity following an attack of lobar pneumonia.

2nd: The probability that any product of the pneumococcus can produce an immunity is open to grave doubt.

3rd: Where definite and lasting immunity is known to follow infectious diseases, this state does not appear with the startling rapidity of the pneumonia crisis—it is determined after the event, in diseases of gradual cessation.

The epidemiology of lobar pneumonia might be no less obscure under the suggested explanation than under that now accepted. Yet the shift to a spirochete as the causal factor in the primary pneumonias would open the way for a shift from the air-borne method of transfer in these diseases to transfer by an insect, as in relapsing fever and malaria.

It is well known that "American" relapsing fever had nearly disappeared from the scene before the

beginning of the present century. The cause of this disappearance is not known. Lobar pneumonia in the years since 1900 has shown a tendency to follow a like course. The disease has declined to a marked degree without obvious reason.

The thoughts here expressed are, of course, entirely speculative. They are based upon a long-time dissatisfaction with a belief that is largely illogical.

It seems that the substitution would transform an indefinite and inconsistent picture into one of clarity and satisfaction.

Investigations along intimated lines might not be out of place regardless of the skepticism with which these thoughts will no doubt be received.

3912 Seminary Avenue.

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### **Famous Scenes in American Medical History on Exhibition.**

Some of the most celebrated and dramatic scenes in the history of American medicine are on exhibition in oils at the Enoch Pratt Library in Baltimore. Dean Cornwell, noted American muralist and genre painter, and member of the National Academy, is exhibiting the series of paintings he has executed to date for the "Pioneers of American Medicine" series for Wyeth Incorporated, well known ethical drug concern of Philadelphia.

The exhibition, which is open to the public every weekday from 9 A.M. to 9 P.M. until May 12, records on canvas in faithful detail colorful events in American medicine which have gone down in history as marking another step forward in man's fight against disease and suffering.

As in the other arts and professions recognition was slow in coming to the American physician and surgeon for his contributions towards the advancement of medical science and knowledge, due to our dependence on the great European universities and institutions. But beginning with the middle of the last century, American medicine and surgery began to make their influence felt throughout the world through the work of such celebrated pioneers as Dr. William Osler, who helped to establish Johns Hopkins University; Dr. Ephraim McDowell, father

of abdominal surgery; Dr. William Beaumont, whose recorded observations of the action of the processes of the stomach during digestions is now a classic; William Proctor, Jr., father of American pharmacy; Major Walter Reed, who proved in a series of dramatic experiments that the female mosquito was the carrier of the dread disease Yellow Fever; and others.

It is these famous American pioneers, in the midst of their earth-shaking discoveries, that Mr. Cornwell has depicted in the series on exhibition.

### **New Upjohn Message Implements Educational Campaigns.**

The sharp increase of rheumatic fever among children and its prevalence among our armed forces have centered considerable attention on this serious medical problem. In New York City alone, rheumatic fever is reported to kill five times as many children as six common reportable diseases combined.

To cooperate with physicians, public health services and the newly formed Council on Rheumatic Fever in fighting this crippling disease, The Upjohn Company has devoted its "Your Doctor Speaks" message in May issues of *Saturday Evening Post*, *Time*, *Parents' Magazine* and other national publications to a challenging appeal.



## THE COUNCIL MEDICAL SOCIETY OF VIRGINIA

A special meeting of the Council was held on Friday, April 6, 1945, at the Society's office in Richmond. The meeting was called to discuss the health education program which is being promoted in a limited number of counties on an experimental basis under the direction of the Health and Physical Education section of the Division of Instruction, State Department of Education. This had been discussed at the Council meeting in February but was apparently not working out to the satisfaction of all concerned. Dr. H. B. Mulholland, president, presided. Others attending were: Dr. J. L. Rawls, president-elect; Dr. H. B. Haag, first vice-president; Drs. F. C. Pratt, C. L. Harrell, W. B. Porter, J. L. Hamner, J. R. Gorman, Alex. F. Robertson, Jr., J. E. Knight, and F. H. Smith, councilors; Dr. I. C. Riffin, State Health Commissioner; Dr. M. Pierce Rucker, editor; and Dr. J. M. Emmett, chairman of the Public Relations and Medical Service Committee.

Dr. Mulholland stated the purpose of the meeting and said that reading of the minutes of the last meeting of the Council would be dispensed with unless there was a request for them. Upon call, the part which related to the subject under discussion and the action taken by the Council was read.

In the discussion which followed, it was felt that the program as first presented was all right, but it had not been carried out according to plan, and it had been found that it was started before being presented to the Council or State Health Department. It had been stated that the medical and hospital services would be financed by civic and community organizations, but it was learned that parents were being required to pay if they were thought to be financially able. Dr. Gorman stated that if a fee is paid by the parent, the patient becomes a private one and should be allowed the selection of his physician. He also said that the Lynchburg doctors had done no operations nor would they under the present plan, and that the hospitals had stated they would be unable to accommodate these children.

Dr. Riffin said Mr. Graves had brought him a copy of a letter he had written Dr. Mulholland, which appeared in the last VIRGINIA MEDICAL MONTHLY, and they discussed the plan but he had not approved anything. The Health Department does not approve of the way the program is being put on, as examinations are being made by teachers, *not* by physicians.

An editorial was read from the *Southwestern Virginia Enterprise*, published in Wytheville, commending the work being done by Dr. Bennett to whom the editor referred as a doctor with the United States Public Health Service. This appeared to have been written by some one who had been misinformed as to the facts and it also rather severely criticized the medical profession.

As a result of the discussion, it was felt that the program had a poor start, and that teachers should be in-

structed to make inspections of children and not examinations and diagnoses as reports coming in indicated.

Following the preliminary discussion in the Council, Mr. Eliot V. Graves, supervisor of Physical and Health Education for the State, his field worker, Dr. Bennett, and Misses Ellen Smith, Leslie Foster and Gwen McWhorter of the Virginia Tuberculosis Association were asked to appear. (Dr. Bennett did not attend.)

Mr. Graves expressed himself as sorry that the doctors were not satisfied with the program the State Board of Education had put on and said he had discussed it with Dr. Riffin and Dr. Gorman and thought it had their approval. He called attention to the section of their plan on Medical Service and said they had followed this policy and that it had the approval of a number of doctors. The Councilors felt the Medical Service section satisfactory if lived up to, but both Dr. Riffin and Dr. Mulholland had received letters from some doctors in the experimental counties, stating the program is not being adhered to as planned.

It was brought out that this work had been started before the plan was presented to the Medical Society or to the State Health Department. Several members of the Council thought that Mr. Graves had been misinformed as to the actual manner in which the field work was being carried on. At this point, Dr. Gorman asked why Dr. Bennett could not be present at this meeting because he had been given practically a month's notice, and Mr. Graves stated that he was responsible for Dr. Bennett not being there as he had work to do in another section of the State at this time. Mr. Graves was then asked how the Wytheville newspaper received the information upon which they based their editorial with reference to his program. In this editorial, Dr. Bennett was incorrectly referred to as a doctor with the United States Public Health Service, when, as a matter of fact, he has no M.D. degree but is a Ph.D. Several members of the Council expressed the opinion that a correction should be made by Mr. Graves in the Wytheville paper, indicating that the statistics regarding defects found in school children were the result of an examination made by teachers and that, therefore, many of these defects probably would not be found to be present by competent physicians. Dr. Riffin then stated that three of his Health Officers had already advised him that they were not in accord with the program as it was being carried out in their respective areas. It was next brought out that Dr. Bennett had written directly to Miss Foster of the Virginia Tuberculosis Association with reference to having mass x-rays made of school children in certain areas. In most of these areas, recent mass x-rays have been taken and it is the policy of the Virginia Tuberculosis Association not to do this work except in close cooperation with the State Health Department.

Miss Ellen Smith, president of the Virginia Tuberculosis

Association, was then introduced. She stated that Dr. Riggin had told them that they were involved in this discussion and they had asked permission to be present in order that they might present their side of the case. Miss Smith introduced Miss Leslie Foster, Executive Secretary of the Association, who stated that Dr. Bennett called her office and suggested that all agencies involved in health work cooperate. They understood from Dr. Bennett that his suggestion had been approved by the State Health Department and, therefore, that the survey was being carried out in accordance with previous understandings between the Virginia Tuberculosis Association and the State Health Department. Miss McWhorter was also asked to make a statement but she said that she had nothing to add, but expressed the desire to cooperate with the medical profession and the State Health Department in every way.

Mr. Graves asked if the Council wished to offer any suggestions. After discussion, Dr. Harrell offered the following motion, which was seconded: That all health surveys and health programs put on throughout the State by any agency first have the approval of the State Department of Health. This was carried.

It was then suggested that the president appoint a committee to meet with Mr. Graves and thrash out this problem. Following this, motion was made and carried that the Council reaffirm its resolution adopted at the last meeting of the Council, as follows:

1. Approves the principle of health education in state schools;
2. Disapproves equally all other aspects of this project as carried out in the experimental counties;
3. Approves the examination of school children by competent physicians and the correction of remediable defects, and, further;
4. Is of the opinion that such a project as had been proposed and carried on should be supervised by the State Health Department.

It was felt that the Public Relations Committee could meet with Mr. Graves and iron out the difficulties; perhaps an additional member or two should be added to this committee, and this was left to the president.

Under new business, Dr. Mulholland said the Committee on Syphilis Control had sent him the following resolution for approval by the Council:

It is respectfully requested and recommended that the Council of the Medical Society of Virginia provide for the appointment of a special committee to study and make recommendations with regard to the following:

1. The extent and nature of the problem of central nervous system syphilis in Virginia,
2. The need for hospitalizing these cases to provide adequate therapy,
3. The possibilities of extending the use of facilities already established in the State for the treatment of central nervous system syphilis,
4. The need for additional treatment facilities,
5. If additional facilities are needed how they can best be provided.

It is respectfully suggested that this committee include representation from the Medical Society of Virginia, the State Health Department, the Departments of Syphilology of the two medical schools, and the State Department of Mental Hygiene and Hospitals. The urgency of the problem recommends that the earliest possible action be taken in this regard.

Motion was adopted that this be referred back to the Committee on Syphilis Control with authority for the chairman to appoint any additional members he may wish to cooperate with them.

Mr. Hudgens, director of the Hospital Division of the Medical College of Virginia, had sent Dr. Mulholland copy of a letter from Mr. Corbett Reedy, State Supervisor of Vocational Rehabilitation, asking use of the Out-Patient Clinic of the Medical College of Virginia in securing medical examinations of its clients, paying the usual fee for examinations to the hospital. Some one asked why the University of Virginia Out-Patient Clinic might not be used as well. Dr. Mulholland said that, in replying to Mr. Hudgens, he had promised to bring this up at the Council meeting but that when the matter was brought to the attention of the Council sometime ago by Mr. Anderson, it was suggested that specialists were to be picked out throughout the State and individuals were to be referred to the one most accessible to the patient. Motion was then offered and adopted that in the medical examination of clients for Vocational Rehabilitation, available local facilities as well as those of the Medical College of Virginia be utilized, the patient to be referred by the family physician whenever possible.

Dr. Harrell read a resolution which Dr. R. D. Kimbrough, chairman of the Nutrition Committee, asked him to present, as follows:

WHEREAS, it is necessary and advisable to protect so far as may be possible the health of the people of this State against deficiency of certain ingredients in foods necessary to health and well-being of the people, and

WHEREAS, the compulsory enrichment of flour and bread, required by the War Food Administration, terminates with the resolution of the wartime powers of the Administration,

THEREFORE, BE IT RESOLVED that the Medical Society of Virginia, through its Council, respectfully requests that legislation be adopted requiring a continuance of the enrichment of these necessary foods.

This was seconded and carried.

Dr. Mulholland stated that he had written the Office of Defense Transportation with regard to holding a meeting of the House of Delegates in the Fall but had not received a reply to this time.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,

*Secretary*

Approved:

H. B. MULHOLLAND,

*President.*

April 16, 1945.

## PUBLIC HEALTH

I. C. RIGGIN, M. D.,  
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for March, 1945, as compared with the same month in 1944, and for the period of January through March, 1945, compared with the same period in 1944, follows:

	Mar. 1945	Mar. 1944	Jan.- 1945	Jan.- 1944
Typhoid and Paratyphoid Fever	3	9	13	18
Diarrhea and Dysentery	419	139	812	474
Measles	378	4,620	628	8,628
Scarlet Fever	735	409	1,648	917
Diphtheria	19	13	81	63
Poliomyelitis	4	1	12	2
Meningitis	42	105	98	262
Undulant Fever	0	4	3	10
Rocky Mountain Spotted Fever	0	0	1	1
Tularemia	2	8	12	16

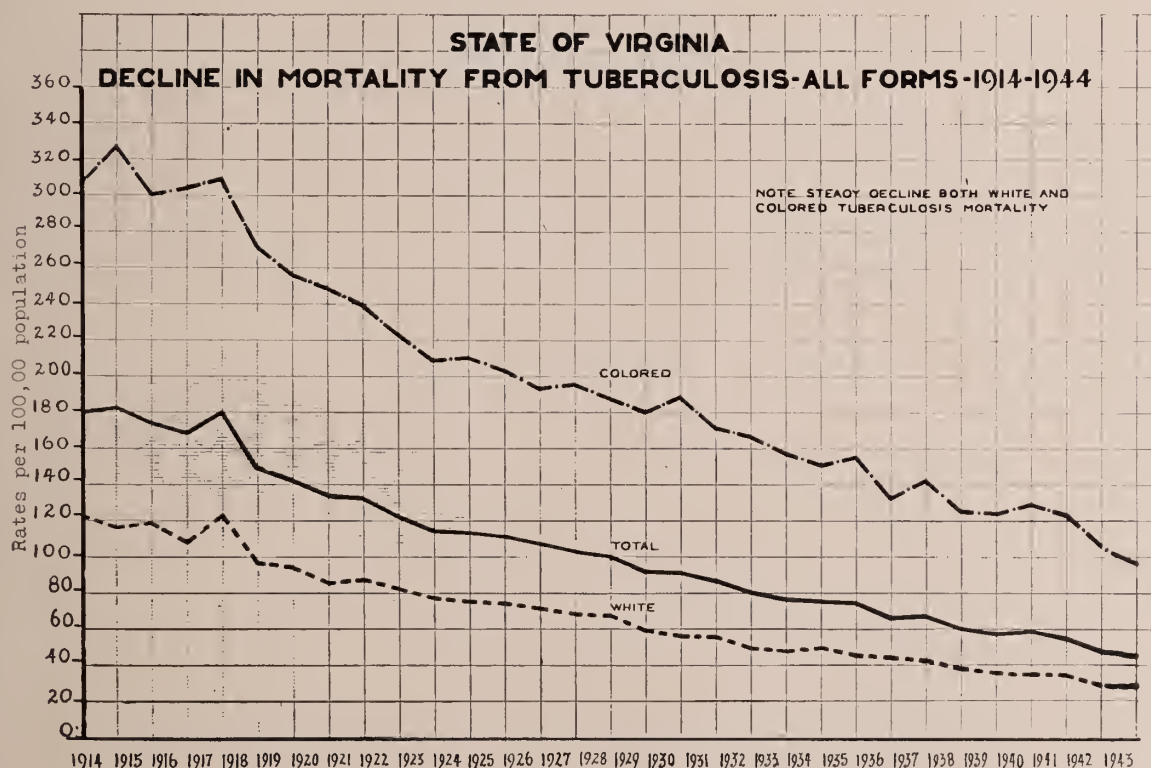
## DECLINE IN TUBERCULOSIS DEATHS

Presented in the table are the deaths per 100,000 population due to tuberculosis for all forms 1913-1944. It will be seen that a marked decline has occurred in this disease in Virginia.

Two interesting points on this graph are to be noted. In 1918 a noticeable rise in tuberculosis is shown for both the white and colored populations. The peak is indicated for that year by the solid black line giving the total for both races.

Secondly, there has been no increase in tuberculosis deaths during the war years of World War II. In fact, the decline in the colored deaths has been marked throughout the past three years.

Many factors enter into this decline such as industrial hygiene tuberculosis surveys, clinics and higher standards of living earnings. At present, however, it is impossible to evaluate the true significance of these factors.





## CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE  
MEDICAL SOCIETY OF VIRGINIA

This patient (Case 19-A) was a colored woman, gravida i, age 17, who lived in the city. She had adequate prenatal care in a prenatal clinic and was admitted to a hospital in labor at eight months. Labor was normal and without untoward event. On the second postpartum day, temperature elevation was 101°. Urinalysis showed urine loaded with pus cells. A urologist examined the patient and confirmed the diagnosis of pyuria. After several days of septic temperature, an X-ray was done but no stone or structural pathology in the urinary tract was found. The patient was treated by forcing fluids, repeated transfusions, glucose and saline intravenously, and sulfathiazole, gr. xxv, q.4 hrs. for six days. Hemoglobin did not go below 75%. Irregular temperature persisted during the first week ranging from 101° to 104° and then gradually reduced. The findings of pus in the urine did not

change. Four days before death occurred, temperature ranged from 98° to 100.8° and it was thought that the patient was improving. On the thirteenth day, postpartum, patient died rather suddenly.

AUTOPSY SHOWED: Perinephritic abscess, right; Perinephrosis, right; Pyelonephritis, acute, left; Marked acute toxic myocarditis with dilatation of the heart; No embolus of the lungs could be found. Death was attributed to the acute infection of the urinary tract with terminal acute toxic myocarditis.

This is classified as an obstetrical death due to the puerperal sepsis particularly affecting the urinary tract. There is no record of previous urinary tract infection. The very acute nature would suggest the virulent infection at the time of delivery. It was therefore considered to be a preventable death.

## CORRESPONDENCE

### The Vanishing Rural General Practitioner. TO THE EDITOR:

Medical Societies are fighting the Wagner Bills and socialized medicine. The demand for government or socialized medicine is based principally on the inadequacy of rural and small town medical care. We of the medical profession must offer some solution to the present day problem, especially of rural and small town medical care if we expect to accomplish anything toward maintaining our present system of private practice.

Unfortunately, organized medicine is controlled by the specialists and self-styled higher-ups who are not personally acquainted with the rural problems. Most small town and rural doctors belong to a local society in some nearby city and they have no official voice in the affairs of the local society nor of the state nor national societies. These men are only interested in funneling all of the cream into their centers and do not want to see adequate or attractive facilities in the outlying areas on the pretense that neither adequate facilities nor per-

sonnel can be maintained in small towns. They claim that we general practitioners will render inferior medical care. Of course our medical care as well as their own will be in proportion to what we have to work with and the type of personnel. In rural areas as well as in the city the type of personnel will depend upon how attractive the facilities and opportunities are.

A referred patient is usually a lost one. After it leaves the hospital, it is necessary to return to the central specialist's office for routine check-ups on the pretense that he cannot remain a good doctor without following his case indefinitely. It is not granted that the poor general practitioner in small towns needs to follow his cases, and he is accused of not being able to do the work. God pity the M. D. who cannot put a patient on the table and do a satisfactory pelvis examination or follow an ambulatory patient following an unexplained secondary anemia. People are not going to pay several physicians to do routine office check-ups, and they think that they must do what the big shot specialist commands.

While it is true that any consultant who sees a case is naturally interested in following it through to conclusion, it is not practical for every doctor who sees a case to continue to attend it. It seems that the case should belong to the family physician who first saw it.

A young man entering the practice of medicine is not so much interested in monetary income as in a decent chance to practice his profession because with proper education and facilities, and sufficient energy and ambition one can make a modest living practicing medicine anywhere. Young physicians have already ceased to locate in small towns and rural areas. We must do something to stop this trend at once or our government will have no trouble in getting the public to accept governmental or socialized medicine.

It has been suggested that general practitioners in rural areas have their income subsidized from some source in order to attract young men to the country. This would draw mostly the inferior ones who were not able to meet competition and stand on their own in the city. If the subsidy money were spent in providing small hospitals and treatment centers about every twenty-five or thirty miles the physicians could go out from these places on calls making the distance in no case more than fifteen miles from headquarters, thereby providing adequate care to the people and desirable conditions for the doctor.

My constructive suggestion is that we make a thorough study of the work of the Kellogg Foundation in Michigan and attempt to find a way to adopt a similar program all over our country. Most of the experiments in the past have wanted to build too large institutions in small towns which could not later be maintained by local funds as they should be. The class III hospital and medical center suggested by Graham L. Davis in his article, *Those Horse and Buggy Hospitals Must Go* published in *The Modern Hospital*, 62: No. 3, March 1944, I believe would solve most of our problems. If the hospitals could be constructed, the community could maintain them.

Modern methods make it necessary to treat all major illnesses in the hospitals, and hospital insurance is causing the public to demand hospitalization. These factors make it necessary for doctors to practice where they can treat their patients in a hospital if they are going to have sufficient practice

to make a decent income, and also, they must work in a hospital to keep abreast of the advances and be capable of doing their work efficiently.

Altavista, Virginia, J. PAUL KENT, M.D.  
March 1945.

### Virginia Medical Service Association.

#### TO THE MEMBERSHIP OF THE MEDICAL SOCIETY OF VIRGINIA:

If you have not already sent in your application to become a Participating Doctor in this Association, you are urged to do so now.

In the short time since the opportunity to participate was offered you, some 25 per cent of the members of the staffs of hospitals in those areas where the local medical society has approved the program being offered by the Virginia Medical Service Association have already signed up as Participating Doctors. In addition, many practicing physicians who are not at the present time on the staff of a hospital have evidenced their interest in this program to place medical expense in the family budget on a non-profit basis by signing applications.

Many physicians who are not on the staff of a hospital have asked if they might sign in order to be a part of this worthwhile program toward bettering the economic relationship between patient and physician. Those who have asked have been told that they could participate.

Any physician can become a Participating Doctor even though at the present time he is unable to place his own patients in a hospital. The participation of physicians will strengthen the position of the plan of organized medicine in this State. Many of those who do not now have hospital connections will undoubtedly have them in the near future and until such time as they do have hospitalized cases, or the plan has been broadened to include home and office calls, they can act as missionaries and join with the other doctors in this State and elsewhere in expressing their desire to cooperate in keeping medical expense on a voluntary basis.

Those doctors on the staffs of hospitals who have not already sent in their applications are urged to do so promptly in order that they may be on the original list and classified as charter members.

Very truly yours,

ALEX F. ROBERTSON, JR., *President,*  
*Virginia Medical Service Association.*

April 16, 1945.

**WOMAN'S AUXILIARY**  
to the  
**MEDICAL SOCIETY OF VIRGINIA**

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*President*.....MRS. PAUL C. PEARSON, Aylett  
*President-Elect*.....MRS. P. M. CHICHESTER, Abingdon  
*Recording Secretary*.....MRS. C. C. SMITH, Norfolk  
*Corresponding Secretary*.....MRS. HAWES CAMPBELL, Turpin  
*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond  
*Chairman, Press and Publicity*.....MRS. A. G. SHETTER, Richmond.

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**NORFOLK**

The Executive Committee held a meeting on April 9th which was followed by a general meeting of the Auxiliary to the Norfolk County Medical Society. Both meetings were held at Ames & Brownley in the private dining room and club room, and Mrs. Southgate Leigh, president, presided.

After the secretary read the minutes of the previous meeting, and the treasurer gave her report, recommendations from the executive meeting were presented. The recommendation that a photo-electric screen be presented to the Norfolk County Medical Society as a Doctor's Day gift was unanimously accepted.

Mrs. R. M. Reynolds spoke in favor of the recommendation that the Auxiliary investigate the status of the Tidewater Hospital with the aim of having it restored to its former use as a hospital for local tubercular patients. This hospital had been taken over by the army at the special request of Governor Darden, and since it is not now being used by the Army it has been thought advisable to have it returned before the Governor's term expires. A motion was passed to have the Auxiliary look into this matter, and the president named the following committee: Mrs. Tilden Smith and Mrs. R. M. Reynolds.

Mrs. Steingold reported that 15 subscriptions to *Hygeia* had been secured from Norfolk and Portsmouth.

Mrs. J. W. Anderson, Chairman of the War Service Committee, made a report on the work done at Christmas time. In cooperation with the Grey Ladies at the Naval Operating Base a party was given on December 21. Several members of the organization had donated fruit and cigarettes and made cookies. These together with the funds from the organization and individual members made the re-

freshments quite ample. The committee served as hostesses, and the soldiers and Red Cross were most appreciative.

Mrs. C. J. Divine, War Fund Chairman, reported that her committee had functioned very effectively during the Norfolk War Fund Drive.

The Secretary read a letter to the President from the Norfolk Chairman of the United Clothing Collection soliciting our support. Also, a letter from Norfolk General Hospital in regard to the Blood Bank which they hope to establish. Our cooperation was asked, and cards were distributed among the members for the benefit of those who wanted to make pledges.

The President announced that she had been invited to attend a recent tea given by the Business and Professional Women's Club of Portsmouth. Mrs. K. W. Howard had been asked to represent the Auxiliary and she reported that she had been glad to do so.

Mrs. Leigh named the Nominating Committee for next year's officers, the slate to be presented at the next meeting. Mrs. R. M. Reynolds is Chairman with Mrs. A. G. Horton and Mrs. Millard B. Savage as the other members. Mrs. Leigh also asked if it would be permissible to have the May meeting at night. The date of this meeting had been previously set for May 21 and it has been found to be the date of a meeting of the Norfolk County Medical Society. Therefore, Mrs. Leigh invited the Auxiliary to meet at her house at eight o'clock, after which she hoped to have the Medical Society join us for an informal party. This invitation was heartily received.

There being no further business the meeting was adjourned to be followed immediately by a two-course luncheon. Mrs. C. M. McCoy, President-elect, gave the invocation.

Mrs. Paul Pearson, State President, had arrived, and was later introduced by Mrs. Leigh, who served as master of ceremonies at the luncheon. She also introduced Mrs. Richard H. Peake, who had arranged the lovely and artistic flowers for the tables; Mrs. C. C. Cooley, in charge of finances; Mrs. Stark Sutton, in charge of reservations; and Mrs. Millard



B. Savage, Social Chairman, all of whom had helped make the luncheon possible.

Mrs. C. C. Smith, Doctors' Day Committee Chairman, presented to Dr. Claiborne Willcox, President of the Norfolk County Medical Society, a photo-electric screen for the Library of the Medical Arts Building. In response, Dr. Willcox thanked the organization, and assured us that it had for some time been a distinct need.

Mrs. R. Bryan Grinnan, Chairman of the Health Education Committee, introduced the principal speaker, Dr. Ruth Flynn Harrell, who spoke on The Mental Processes as Related to Protein Metabolism.

Mrs. Pearson graciously commended our war work and urged concentration on the problem of juvenile delinquency and the subscription to and reading of *Hygeia* and the Virginia Bulletin.

KATHERINE B. SALLEY.  
(Mrs. W. C.)

#### NORTHAMPTON-ACCOMAC

The Woman's Auxiliary to the Northampton-Accomac Medical Societies held its quarterly meeting at the home of Mrs. Wm. B. Trower at Cape Charles on April 10th. Preceding the meeting, fifteen members enjoyed a most delightful luncheon served by the Rainbow Class of the Cheriton Methodist Church in their Sunday School building.

The business meeting followed at Mrs. Trower's home, and was opened with the Lord's Prayer, by the President, Mrs. C. E. Critcher. Minutes of the January meeting were read as also the treasurer's report and reports from various committees.

Announcement was made of the purchase of a new desk and chair for the business manager's office at the Northampton-Accomac Hospital, as the Xmas Gift of the Auxiliary.

An interesting letter was read from Mrs. Fletcher Wright of Petersburg telling of her war work as chairman of the Petersburg Blood Donor Service.

Mrs. H. L. Denoon, Jr., read a letter urging the continuing of the Jane Todd Crawford Memorial Fund as a tribute to Mrs. Crawford and Dr. McDowell.

Mrs. S. K. Ames' plan for a practical nurses' register for use of the doctors and hospital was accepted.

At the mid-winter board meeting of the Woman's Auxiliary to the Medical Society of Virginia, the

Attendance Trophy was presented to the Accomac-Northampton Auxiliary, the presentation being made by Mrs. Hawes Campbell to Mrs. J. L. De Cormis. This award is based on the percentage of members present at all meetings, which was 67.7 per cent during the year 1943-4. Attention was called to the fact that this Auxiliary has received the trophy twice previously, though the membership is composed of members living in a seventy-five mile area.

The program for the afternoon was a paper by Mrs. Wm. B. Trower on "The Prevention of Juvenile Delinquency From a Medical Standpoint". She also explained the work of the County Welfare Department in handling juvenile delinquency. A Panel Discussion led by Mrs. S. K. Ames followed.

The July meeting will again be an all day picnic at the Cabin of Mrs. W. L. Cosby at "Silver Beach" on July 10th, and Mrs. J. M. Lynch, Mrs. S. S. Kellam and Mrs. S. K. Ames will be hostesses at the October meeting, which will be held at the home of Mrs. Kellam in Cape Charles.

CATHERINE R. TROWER,  
(Mrs. HOLLAND)  
*Chairman, Press and Publicity.*

#### RICHMOND

At the January meeting, the Auxiliary contributed \$10.00 to the "March of Dimes", \$5.00 to the State Maintenance Fund, and \$36.50 to the Leigh-Hodges-Wright Memorial Fund.

The guest speaker was a local artist, Miss Willoughby Ions, who spoke informally on her experiences in designing children's toys based on nursery rhymes and "Alice in Wonderland" characters. Some of her toys, Stephen Foster plates and tapestries were exhibited. She delighted the twenty members by her enthusiasm and friendliness.

At the February meeting, Mrs. B. B. Bagby, Jr., reported on the State meeting of the Auxiliaries. We would like to extend our congratulations to the Accomac-Northampton Auxiliary for their winning of the attendance trophy.

Mrs. Reuben Simms gave a short talk on the Jane Todd Crawford Memorial Fund to which the Auxiliary contributed \$5.00.

Mrs. W. R. Morton introduced the speaker, Miss Page Drinker, who gave an interesting talk on "Are We Well Fed?" and presented a film entitled "For Health and Happiness."

In March, we enjoyed technicolor slides on flower

arrangements based on the booklets "Homes and Flowers" and "Flower Arrangements A Fascinating Hobby", music of springtime was softly played during the showing of the slides.

Mrs. Paul Pearson, our State President, was honor guest at a luncheon held at the Academy Building, on April 20.

EVELYN ROW,  
(MRS. GEO. S.)  
*Recording Secretary.*

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## BOOK ANNOUNCEMENTS

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Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

**Alcoholics Are Sick People.** By ROBERT V. SELINGER, M.D. In Collaboration with Victoria Cranford. Edited by Harold S. Goodwin, B.A. Baltimore. Alcoholism Publications. 1945. xv-80 pages. Cloth. Price \$2.00.

**Doctors at War.** Edited by MORRIS FISHBEIN, M.D., Editor of the *Journal of the American Medical Association*; Chairman of the Committee on Information of the Division of Medical Sciences of the National Research Council. 1945, E. P. Dutton & Company, Inc., New York. xiii-418 pages. Illustrated with Photographs and Charts. Cloth. Price \$5.00.

**Clinical Roentgenology of the Digestive Tract.** By MAURICE FELDMAN, M.D., Assistant Professor of Gastroenterology, University of Maryland; Assistant in Gastroenterology, Mercy Hospital; Consulting Roentgenologist, Sinai Hospital. Second Edition. Baltimore. The Williams and Wilkins Company. 1945. ix-769 pages. Illustrated. Cloth. Price \$7.00.

**Trauma in Internal Diseases.** With Consideration of Experimental Pathology and Medicolegal Aspects. By RUDOLF A. STERN, M.D., Assistant Attending Physician, City Hospital, New York City. Foreword by Francis Carter Wood, M.D., Director of Laboratories and Radiotherapy Department, St. Luke's Hospital, New York. Grune and Stratton,

New York. 1945. xxiv-575 pages. Cloth. Price \$6.75.

**Constitution and Disease.** Applied Constitutional Pathology. By JULIUS BAUER, M.D., Professor of Clinical Medicine, College of Medical Evangelists, Los Angeles; Senior Attending Physician, Los Angeles County General Hospital; etc. Second Edition, Revised and Enlarged. New York. Grune and Stratton. 1945. xiii-247 pages. Cloth. Price \$4.00.

**Penicillin Therapy.** Including Tyrothrocin and Other Antibiotic Therapy. By JOHN A. KOLMER, M.S., M.D., Dr.P.H., Sc.D., LL.D., L.H.D., F.A.C.P., Professor of Medicine in the School of Medicine and the School of Dentistry, Temple University; Director of the Research Institute of Cutaneous Medicine; etc. D. Appleton-Century Company, New York. 1945. xv-302 pages. Cloth. Price \$5.00.

**The Management of Neurosyphilis.** By BERNHARD DATTNER, M.D., Jur. D., Associate Clinical Professor of Neurology, New York University Medical College. With the Collaboration of Evan W. Thomas, M.D., Gertrude Wexler, M.D., and Joseph Earle Moore, M.D. Grune & Stratton, New York. 1944. 398 pages. Cloth. Price \$5.50.

The author gives a systematic review of all the methods of treating neurosyphilis. He feels that the new ones are not overwhelmingly superior to their predecessors and further states that they are not true substitutes for Malaria Therapy.

His initial chapters are devoted to consideration of the spinal fluid in which he deals with the technic of removal as well as the examination of same. The Spinal Fluid Syndromes of the various types of neurosyphilis are presented in a comprehensive manner. He highly emphasizes the fact that no proper syphilis therapy can be really undertaken without understanding of the spinal fluid findings.

In discussion of the various therapeutic measures he gives analysis of known facts and numerous examples that have been gathered in continuous follow up of patients over a long period of time. His monographic studies suggest diligent application in dealing with such an important subject.

I highly recommend this book for student reference; for general practitioners who need guidance in the handling of neurosyphilis, and to those specializing in the field of Neurology and Psychiatry. It is an excellent contribution to the field of neurosyphilis.

VINCENT EDWARD LASCARA, M.D.

# VIRGINIA MEDICAL MONTHLY

*Official Publication of the Medical Society of Virginia*

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,

*Editor Emeritus*

M. PIERCE RUCKER, M. D.,

*Editor*

AGNES V. EDWARDS

*Business Manager*

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### Dangerous Legislation

THE original Murray-Dingell-Wagner Bill is dead, but it will be resurrected, and with modifications, will be re-introduced and re-introduced until it is finally passed by Congress, unless the lovers of liberty and free enterprise keep constant vigil. It is therefore a comfort to learn that organized labor is not 100 per cent for the bill, although this is the general impression. The supporters of the bill have boasted that they have the unanimous support of labor. The strongest editorial we have seen *against* such legislation appeared in *The Labor Union* (January 12, 1945). It begins with the statement that some legislation is dangerous for one class and some for another class, but this proposed legislation is dangerous to all alike. One-half of the twelve billion dollars that the bill proposes to raise annually is to come from pay roll deductions. This vast sum will go into the common spending pool and will have to be made up by future taxation. The editor evidently has had experience with federal bureaus, for he states that for every \$100 of the workman's money he will get \$25 of "so-called" service.

"What the American public, and particularly the laboring class, should clearly understand is that this plan is not simply a blow aimed at the medical profession, but part of a huge armored force attack which is battering the whole front of freedom, initiative, enterprise, liberty and self respect for all the American people." If the medical profession can be destroyed, so can the legal profession, the engineering, the teaching or any other.

We agree with the editor of *The Labor Union* that the problem of providing top-grade medical attention for those who can not pay top prices is a major one, and that taxing the workers' millions of dollars to be spent by some medical dictator set up by bureaucrats, is no solution.



### National Medicine

LORD Horder in the annual address delivered before the Cardiff Medical Society, February 21, 1945, introduced a new term to describe the menace that confronts medicine in Great Britain (and in this country also). He objects to the term "State medicine" for we already have State medicine. Socialized medicine is even more ambiguous. Socialists use both terms interchangeably and mean by both that the State takes control of medicine completely. But socialized medicine may have another connotation: It may mean making medicine more accessible to the people, and this may be done without nationalizing the medical profession. The new term "social medicine", according to its chief proponent, concerns itself with the many and varied problems created by sickness in the family and the community as a whole. This is not a new concept in medicine, but the new term is a timely and justifiable challenge both to medicine and the State.

Lord Horder then lists the basic conditions that make health possible, a list he formulated many years ago, and about which the State has done little. They are: (1) enough of the right food; (2) shelter at a rent which leaves something with which to buy food and pay for transportation to and from work; (3) easy access to fresh air and the sun; (4) leisure to play, and that may perhaps lead to thinking, even "high thinking"; (5) the amenities, among which he puts noise control; and (6) giving to every human being a chance *before* he is born, and after death, the decent disposal of his body in the best interest of his fellow-man. On the positive side the State has fostered the development of things that have a deleterious effect upon the national fitness, such as the quack medicine trade and the intimidating nature of the advertisements connected with it.

Lord Horder believes that the doctor should be free from partisan politics. For him there is only expert knowledge, a rooted adherence to truth, horse sense and a humanist outlook. Detachment, public confidence and courage are essential, but withal the fundamental note in the doctor's ideal is freedom. If medicine is nationalized, it is to a large degree monopolized; it is stereotyped. This risk to medicine's freedom must be watched jealously or we may lose it; lose it even when those who steal it from us do so with the best intentions in the world—with good intentions but with mistaken action. Under the Beveridge plan the general practitioner, the free choice of the doctor, and the voluntary hospital would practically be eliminated. The voluntary hospital is certainly the medium through which the most striking advances both in clinical knowledge and in laboratory research, have been made. From this type of institution the best trained exponents of medicine are disseminated, and its survival must be encouraged, not merely permitted, in the national interest.

### "Courage and Devotion Beyond the Call of Duty"

MEAD Johnson & Company has published a record of official citations to medical officers in the United States Armed Forces during World War II in a preliminary edition, with the promise of a complete de luxe edition. The present edition, admittedly incomplete, is an inspiring little volume. It contains 244 individual citations and eight group citations. Among the medical heroes, we note the following who graduated at Virginia institutions: Capt. Lockhart D. Arbuckle, MC., USN., who graduated from the Medical College of Virginia in 1915, was awarded the Legion of Merit for exceptionally meritorious conduct against the Japanese on Bougainville. Lt. George M. Caldwell, MC., USN., who graduated from the University of Virginia in 1935,

was awarded the Legion of Merit for exceptionally meritorious conduct on the USS *Shubrick* during the Sicilian campaign. Lt. John B. Clement, MC., USN., a graduate of the Medical College of Virginia in 1943, received the Purple Heart and a commendation for bravery under enemy fire. Lt. Bothwell Graham, III, MC., USN., a graduate of the University of Virginia of 1937, was awarded a Presidential Unit citation. He served as battalion surgeon with the First Marine Division in the conquest of the Solomon Islands. Capt. Henry H. Hancock, MC., USA., who graduated from the University of Virginia in 1937, was presented the Silver Star for gallantry in action in the Sicilian campaign. Capt. Hancock crawled through mine fields and enemy fire to rescue a wounded soldier. Comdr. Harry Ralph Huston, MC., USNR., a graduate of the Medical College of Virginia of 1920, was cited "for meritorious performance of duty while serving at the first advanced naval base hospital to be established in the South Pacific area". Capt. James C. LeFon of Richmond and a graduate of the Medical College of Virginia in 1931, was awarded the Purple Heart and also Oak Leaf Cluster. Major E. Aaron Pushkin, who graduated at the Medical College of Virginia in 1937 was awarded the Soldier's Medal for crawling under an army truck that had overturned in a ditch, and administering morphine to ten soldiers and assisting in their removal.

"Unbounded courage and compassion join'd,  
Tempering each other in the victor's mind,  
Alternately proclaim him good and great,  
And make the hero and the man complete."

—ADDISON.

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## Societies

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### **Elizabeth City County Medical Society.**

The following officers of this Society were installed the first of April: President, Dr. Eldred S. Jones, Hampton; vice-president, Dr. Robert H. Wright, Jr., Phoebus; and secretary-treasurer, Dr. Raymond B. Newman, Newport News.

### **Norfolk County Medical Society.**

By invitation the meeting of this Society on April the 9th was held at the Naval Hospital. The principal speaker of the evening was Captain Carl Broadus, MC, USN, who spoke on Amphibious

Warfare and presented several interesting moving pictures.

### **The Patrick-Henry Medical Society**

Held its quarterly meeting at Broad Street Hotel in Martinsville, on the evening of April the 13th. After a short business session, the Society heard Dr. W. W. S. Butler of Roanoke present a paper on Urinary Tract Infections. This was followed by much discussion, especially centered around the use of penicillin in these infections.

Dr. E. N. Shockley of Bassetts and Dr. T. H. Dickerson of Martinsville are president and secretary-treasurer, respectively.

## News

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The 7th War Loan is on—starting May 14, ending June 30—with the largest individual quota in War Financing History—\$7,000,000,000.00. Seven Billion Dollars!

Heed the Nation's Call!

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### The Neuropsychiatric Society of Virginia

Held an afternoon session at Woodrow Wilson General Hospital, Staunton, on March the 29th. Owing to the death of Dr. O. B. Parden, Dr. D. L. Harrell of Staunton, vice-president, presided. Col. Frank L. Cole, commanding officer of the Hospital, welcomed the group, following which the program was presented which had been arranged by Lt. Col. Charles M. Caravati of the Hospital, and Dr. J. Asa Shield, secretary of the Society. This included papers on Experiences in Treatment of Neurosyphilis at the Hospital by Capt. Sidney Scherlis, and Narco-Analysis in Private Practice by Dr. Elsie G. Adams. Both papers were discussed.

In a business session, Dr. Harrell was elected president, Dr. Shield of Richmond vice-president, and Dr. Claude L. Neale, also of Richmond, secretary-treasurer. A subscription dinner followed at Ingleside Inn.

### Personnel Changes, State Department of Health.

Dr. J. McIver Jackson has replaced Dr. Wm. B. Bailey as Health Officer of the Norfolk-Princess Anne Health District effective March 19, 1945. Dr. Jackson was formerly employed by the Virginia State Health Department, assigned to Prince William-Stafford Health District, from February 1, 1940, to January 13, 1942, when he resigned to accept a position in the State of North Carolina.

### Dr. Thomas H. Hogshead,

Who was engaged in general practice in Staunton until 1941, has located in Monterey where he has resumed general practice. In 1941, Dr. Hogshead joined the "Doctors for Britain Project" but in 1942 transferred from the British to the United States Army from which he received a medical discharge in 1944. From that time until returning to Virginia, he was with the E. I. Du Pont de Nemours Company at Penn's Grove, New Jersey.

### Dr. Raymond D. Kimbrough,

Prominent dermatologist in Norfolk for some years, has accepted the appointment as associate professor of dermatology and syphilology and also of preventive public health medicine at the Medical College of Virginia and was to enter upon his duties here on May the 1st. Dr. Kimbrough is an alumnus of the University of Virginia, Department of Medicine, and was an instructor in dermatology and syphilology there until he moved to Norfolk in 1930 to engage in private practice.

### Service Promotions and News.

Promotions have been noted recently for the following Virginia physicians in Service:

#### To LIEUTENANT COLONEL:

Dr. Edmund M. Ellerson, Staunton  
Dr. Marsh H. McCall, Tazewell  
Dr. John O. McNeel, Charlottesville  
Dr. Claude A. Nunnally, Fredericksburg  
Dr. M. Morris Pinckney, Richmond  
Dr. Garland H. Wolfe, Abingdon

#### To MAJOR:

Dr. Robley D. Bates, Jr., Richmond  
Dr. Daniel C. Booker, Richmond  
Dr. Reynoldson D. Butterworth, Richmond  
Dr. William L. Taliaferro, Norfolk  
Dr. Vernon Atwill Turner, Staunton  
Dr. Thomas D. Watts, Richmond

#### To CAPTAIN (in Army):

Dr. Beverley B. Clary, Richmond

#### To CAPTAIN (in Navy):

Dr. J. E. Marable, Newport News

#### To LIEUTENANT COMMANDER:

Dr. J. U. Gunter, Roanoke

Commander T. N. Spessard, MC, USNR, of Norfolk, was recently transferred from Philadelphia to the U. S. Naval Hospital at Shoemaker, California, where he is chief of neuropsychiatry.

Captain James C. LeFon, MC, has been awarded the Bronze Star Medal for heroic achievement as a medical officer with a Medical Battalion in northern Italy.

Lt. Clyde O'Brien, MC, USNR, of Appomattox, Senior Medical Officer aboard the U.S.S. Carteret



in the Pacific, recently wrote, "I am only a small part in this big operation but we all have one aim in view—to come home to our friends, and I do hope we will soon defeat the enemy and take our places in our communities. We are all giving them our best service, and we do it with grateful hearts."

Dr. Milton Millman, formerly of Norton, has just been released from the U. S. Army, and placed on inactive status due to a physical disability, having been in the Service since July 30, 1943. He plans to practice in Bristol, Va.-Tenn.

#### **Naval Medical Officers Needed.**

The fact that the Army has announced the suspension of procurement of physicians should not be interpreted to mean that the Navy is in the same position. They have announced a need for 3,000 additional doctors immediately. Their rate of casualties has been increasing in recent months and the men must have much-needed medical assistance.

Major E. J. Haden, M.C., of Ore Bank, writes "I want to tell you I appreciate my Virginia Medical Monthly so very much. I have been in administrative work for four years and need to read current medical topics. I have been in the Southwest Pacific for past two years. Was commanding officer of a station hospital in Australia and now I am executive officer of the 133rd General Hospital in the Philippines."

Since the war, physical requirements have been somewhat modified. Physicians are now accepted up to the age of 60. Men in the older groups are assigned to hospitals, dispensaries and other Naval activities ashore. Physical defects which are organic constitute a cause of rejection. However, waivers can be granted for defects which were formerly disqualifying, such as variations in height, weight, defective vision, etc.

Interested physicians, without making any definite commitment whatsoever, will be interviewed at their convenience. Write to the office of Naval Officer Procurement, 1320 G Street, N.W., Washington, D. C.

#### **Dr. Roy A. Barlow**

Announces his removal from Winchester to Berryville.

#### **Dr. Marie Thomas,**

Recently of Roanoke, has located in Huntington, W. Va., where she will continue the practice of her

specialty, pediatrics, with offices in the First Huntington National Bank Building.

#### **Dr. D. Hunter Marrow**

Has returned to his home at Boynton for the summer, after spending the winter at Daytona Beach, Fla.

#### **Dr. James T. Rountree,**

Who was recently at Harrisonburg, is now located at Corpus Christi, Texas, where he is engaged in the practice of surgery.

#### **Dr. Hawes Campbell, Jr.**

Has been transferred from the Western State Hospital at Staunton, where he was senior physician in charge of the female service, to Eastern State Hospital at Williamsburg, where he will have the same position in charge of the male service.

#### **Special Lecture in Richmond.**

The annual lectureship of the Brown-Sequard Chapter of the Alpha Omega Alpha is to be given on May 4th at 4:00 P. M. in the Simon Baruch Auditorium of the Egyptian Building at the Medical College of Virginia by Donald D. Van Slyke, Ph.D., Sc.D., hon. M.D., Chief Research Chemist at the Hospital of the Rockefeller Institute for Medical Research, New York. Dr. Van Slyke will speak on "The Physiology of the Kidney". All interested persons are cordially invited.

#### **Heads Medical Service at Pickett.**

Lt. Col. Burgess L. Gordon, MC, prominent internist of Philadelphia, has been appointed chief of the Medical Service at the new U. S. Army General Hospital at Camp Pickett, this State. He was formerly assistant to the chief of the Administrative Branch, Hospital Division, Office of the Surgeon General.

#### **Appointed on Health Board.**

Dr. M. T. Vaden and Dr. R. B. Eason have just been appointed members of the Board of Health of Buena Vista.

#### **For Sale—**

Laboratory rabbits. We can handle large or small orders and have a constant supply. Contact us for your needs. Bonnie Brae Rabbitry, Route 12, Richmond, Va. Dial 5-2421. (*Adv.*)

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A limited number of convalescent patients may be cared for in the private home of a graduate nurse. For details and rates, write or phone Mrs. D. C. Wills, Arrington, Va. (*Adv.*)

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Virginia licensed M.D. available for two or three weeks locum tenens, June or July. Write No. 52, care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

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## Obituaries

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**Dr. Samuel Edward Hughes,**

Prominent Danville physician, died April 9th, at the age of eighty-one. He graduated from the College of Physicians and Surgeons, Baltimore, in 1891. Dr. Hughes had practiced in Danville for almost fifty years. He was particularly interested in tuberculosis and was a co-founder of the Danville Hill-top Sanatorium. He was also active in public life, having served two terms on the City Council. Dr. Hughes had been a member of the Medical Society of Virginia for fifty years. His wife and a son, Dr. Edwin S. Hughes, survive him.

**Dr. James Henry Rawlings,**

Lynchburg, died April 3rd. He was a native of Charlottesville and seventy-four years of age. Dr. Rawlings received his medical degree from the University of Virginia in 1898, and located in Lynchburg in 1902, where he was for a number of years a member of the staff of Memorial Hospital. Dr. Rawlings was a member of the Medical Society of Virginia, having joined in 1903. A sister survives him.

**Dr. William Dandridge Haden,**

Prominent physician of Charlottesville, died April 8th. He was sixty years of age and a graduate in medicine of the University of Virginia in 1910. Dr. Haden was best known by his career as a city official. He had served as a member and vice-president of the City Council and served for three terms as Mayor. He was a member of the Board of Visitors of the University of Virginia and president of the

Martha Jefferson Hospital. Dr. Haden was also connected with many other business and professional organizations. He had been a member of the Medical Society of Virginia for thirty-five years. His wife and four children survive him.

**Dr. William Bibb Thornhill,**

The "last of Lynchburg's horse and buggy doctors" died April 3rd. He was eighty-two years of age and graduated from the former Hospital College of Medicine, Louisville, in 1886. Dr. Thornhill had practiced in Lynchburg since that time. He served for thirteen years on the Lynchburg Board of Health. Dr. Thornhill had been a member of the Medical Society of Virginia for fifty-seven years. His wife and two daughters survive him.

**Dr. Mathias Grove-Hagen,**

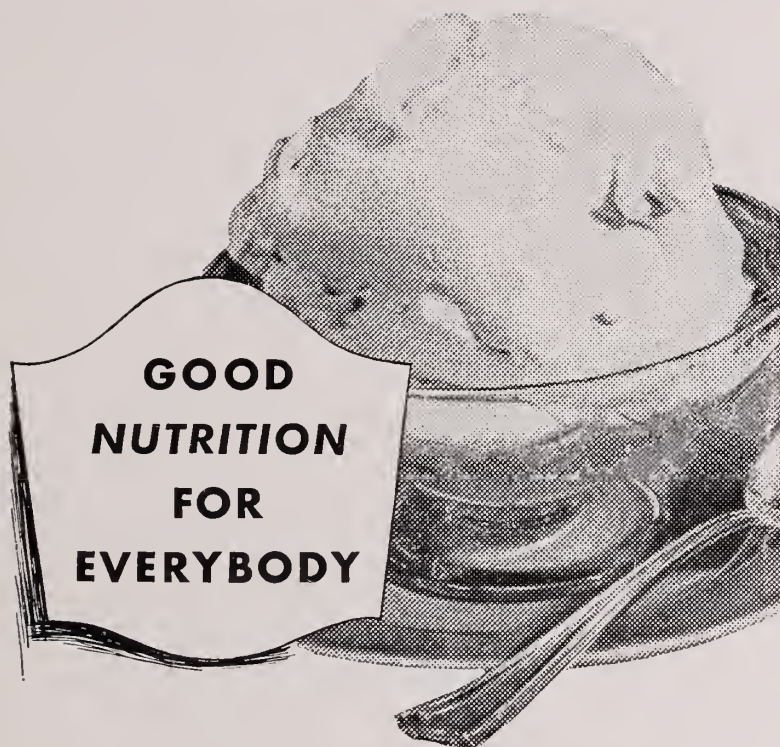
Widely-known Richmond physician, died April 2nd. He was a native of Norway and sixty-five years of age. Dr. Grove-Hagen attended a religious training school in Norway and in 1903 went to Scotland as assistant to the minister of the Norwegian Seamen's Church. He came to the United States in 1906 and graduated from the Medical College of Virginia in 1910. Dr. Grove-Hagen began his private practice as an assistant to the late Dr. Dan Coleman. He taught at the Medical College of Virginia until World War I when he entered the Army. He was physician to St. Joseph's Orphanage and other charitable institutions, and had been a member of the Medical Society of Virginia since 1911. A sister survives him.

**Dr. William Hayes McCarty**

Of Marion died on January the 26th. He was a native of Smyth County and forty-seven years of age. Dr. McCarty was a graduate of the Medical College of Virginia in 1924 and was for more than twenty years a member of the medical staff of the Southwestern State Hospital, having retired several years ago to enter private practice. He was a Rotarian and a member of the Medical Society of Virginia. His wife and two children survive him.

**Lt. Frederick Ray Woodward, MC,**

An alumnus of the Medical College of Virginia, class of '42, died in Abilene, Texas, November 22, in an aircraft accident. He was thirty years of age, and had served an internship and residency at the Los Angeles County Hospital.



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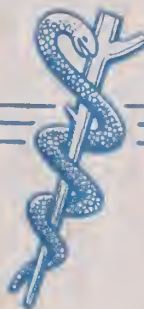
# Virginia MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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June 1945

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## *Guest Editorial*

### The Civilian Doctor Goes to War

DURING 1941 and 1942 when reserve medical officers were leaving their homes and their civilian practices and pursuits in large numbers and arriving at their first duty assignments in military units there was a certain amount of apprehension, perhaps a little head shaking, among the old regulars who were wondering how it would all work out. At the same time the reserve medical officers, no doubt, were also somewhat concerned about the new life and work and were quite naturally speculating as to how difficult it might be to work with the regulars and to conform to all the new and strange ways of doing things.

Enough time has passed now so that the whole picture has come into reasonable perspective and there have been plenty of trials and testings upon which to base a fair report. The observations set down here have been made entirely in the navy, but American human nature and the principles and practice of medicine are of course the same in the two armed services. There are probably no essential differences in the military phases of the services as they affect the life and work of the medical officer; in fact there are greater differences between different units of the same service than there are between the two services as a whole.

One can now generalize strongly and unequivocally that the reserve medical officers have hung up a brilliant record in this war. In terms of such things as lives saved, man-hours conserved, health guarded, preserved or restored, the record is one of vastness, one of tremendous power. In the matter of indifference to self comfort and security, in disregard for personal danger and exhaustion in battle actions, the record is filled with valor and honor.

Great things were expected of the reserve doctors but their achievement as well as their spirit and demeanor so surpassed expectations that the performance has been a heartening surprise to the citizenry, to the old regulars and, we would suppose, to the reserve doctors themselves.

Not that they found everything in and about the service work and life a paradise of perfection or a hunky dory realm of moonlight and roses. Far from it. And so much more to their credit that under conditions of frequent hardships, hazards, bedevilements and bewilderments of a hundred sorts they maintained their morale and a good deal of inward contentment even while outwardly indulging in the favorite and very human military pastime of griping.

Their most sincere and serious gripe concerned their uprooting from the home and family. This was the unkindest cut of all. Even unmarried ones longed for the home scenes and friends. And this misfortune was particularly grievous when the reserve officer happened to land in an inactive spot, where there was comparatively little work or excitement to occupy him. Inaction engendered boredom and provided him with the time for thinking, brooding, and wondering (with a few homely expletives thrown

in): "What good am I here and why did I ever get into this thing?"

One complaint never heard is that a substantial financial sacrifice has been made in giving up one's civilian income for the military pay. Even when this has resulted in important financial readjustments, the loss of property, the scaling down of living standards, neither they nor, indeed, their families have allowed themselves a word or thought of annoyance or regret. Rather, they seem to have found a large measure of pride and happiness in their astonishing ability to get along so well under the new financial pattern.

What they find acutely oppressive and bewildering at first is the inordinate amount of paper work and red tape. They were accustomed to more direct and simple ways of getting things done. But it gradually comes to them that the larger the organization the more complex it must be; that the army and navy medical departments are vastly larger in scope than any medical organization of their former association; that therefore the records, reports, checks, paper machinery of every sort must be multiplied. And as they analyze the needs for it they see some of the reason in it. As reason begins to appear in it much of the sting goes out of it. But not all. Because no one wants to defend excessive paper work or red tape and there is always the strong belief that a considerable part of it could still be classed "excessive and without the support of reason".

It is almost banal to remark that one is happiest in situations where he can do his best work. But this psychological truism has a strong and special application in the life of the reserve medical officer. If he can follow his own specialty, if he can use the talents he has spent a good part of a lifetime in developing and under conditions, such as in a large military hospital, similar to those of the home office, clinic or hospital, he finds himself in a high state of professional and personal satisfaction. But strange to say, the chagrin that comes to him when first assigned to a strange field is rather quickly dispelled when he begins to master the new trade and feels that he is becoming a useful worker in it. For example, there are surprisingly large numbers of jobs and amounts of work for obstetricians, gynecologists and even pediatricians in the service but not enough for all of them. So they and others of other clinical specialties often are assigned to field sanitation units, to desk jobs, administrative capacities, various extra curricular missions. And usually they amaze themselves and certain others by catching on to the new tricks in a hurry and performing the new job not only enthusiastically but exceedingly well. One of the most competent and highly regarded brigade surgeons (a purely administrative and principally military position) I have encountered among Marine Corps units was a reserve medical officer who had spent an extensive and highly successful professional lifetime as an ophthalmologist. He was discouraged, frightened and disappointed over the job at first but in the course of a few weeks was having the time of his life because he and every one else could see that he was making good.

One of the trying and puzzling phases of military life as seen by the reserve doctor lies in the long waiting periods when nothing is happening and there is almost no work to do but with large numbers of medical personnel on hand. He finds it difficult, during his early months in the service, to reconcile these situations with other situations where military hospital staffs are swamped with work and seriously lacking in medical personnel. Later he sees that military developments can not be foretold with precision and that medical personnel must be moved in anticipation of events which may happen much later than expected and frequently do not happen at all at the places where they were anticipated. He finally sees, too, that interminable waiting is one of the commonest as well as one of the most trying experiences in a war. And he learns

that the big reason why the busy hot spots are so short of doctors is that there just aren't enough doctors in the military services to fill all the jobs where heavy work is being done as well as the places where a state of readiness is required for expected future events.

As to the professional services of the reserves and their contributions to the science of medicine during the present war, countless volumes will be filled with the story for the next hundred years or more and Americans will be talking about it in medical and lay circles during the life of the next few generations. And this covers practically all fields of medicine—research laboratories, operating rooms, sanitation units, preventive medicine groups, field surgical units working in fox holes, physical reconstruction units, neuropsychiatric workers, tropical medicine experts.

But the record has not been all one sided. While the civilian doctor who joined the service brought great things to it he also acquired many things from it. He gained much medical knowledge from a huge store of medical experience and comparing of notes with American medical officers from every corner of the United States. He saw more of life in his three or four years of war than one sees provincially in three or four decades of peace.

He will one day come home from the wars, happy to be home but happy to have an absorbing topic for conversation and thought for the rest of his life. And when he tells his grandchildren about it, or when he talks about it some day to young doctors who are not yet born, it will be natural and proper that his listeners will see a gleam of pride in his eye.

R. P. PARSONS, *Captain, Medical Corps,*  
*United States Navy.*

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EDITOR'S NOTE: Dr. Parsons is a Captain in the Medical Corps of the regular Navy, having served continuously since the beginning of World War I. His opinions expressed here are, no doubt, based largely on his experiences as commanding officer of naval hospitals, one of which was the South Pacific hospital "Mob 3", known to the readers of his recent book, "Mob 3". Dr. Parsons is also author of the well known Joseph Goldberger biography, "Trail to Light".

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## Floral Eponym (28)

### DIOCLEA LEGUMINOSAE

DIOCLES OF CARYSTOS, c. 350 B.C.

D. Leguminosae are tender shrubby twiners, with delicate trifoliate leaves and blue, violet, scarlet or white flowers borne in clusters which have been roughly compared to Wistaria.

Diocles was the last of the Hippocrateans and is said to have been the one who collected the Hippocratic books, although this is disputed. It was he and Philistion who added the four Hippocratic humors to the four elements and their qualities. He was the first physician to write in Attic Greek. Diocles was no mean anatomist and was a keen embryologist. He was the first to call attention to the *punctum saliens*. He wrote the first work on Anatomy as well as the first on Hygiene, and also the first Herbal.



## SYMPOSIUM ON NUTRITION\*

WILLIAM H. HIGGINS, M.D., *Chairman*  
Richmond, Virginia.

Among the recent discoveries in medicine prior to the World War none has been more far-reaching in its effect than that of nutritional deficiencies and their correction, with ramifications extending into obstetrics, pediatrics, surgery, and industrial medicine. So I feel we have a subject this afternoon that enters into the specialty of everyone who is present.

With the outbreak of the war it was a perfectly natural move on the part of our Government to select a man who has been pre-eminent in this work on nutrition. In order to get a person of that type the Government drafted the professor of medicine of Vanderbilt University; and he is now connected with the Surgeon-General's office, in charge of the nutrition division of the armed forces of America. Our guest speaker this afternoon is a man whose writings have been the guiding light to those of us who have followed this particular phase of medicine. In all

probability I would be correct in saying that a great deal of the good that medicine has done for the people of America has been offset by our abysmal ignorance of the factors that enter into disease due to nutritional deficiencies; and I know of no subject that is more timely, from the standpoint both of civilians and of our armed forces, than a very frank and free discussion of this subject this afternoon before this State Society. It therefore gives me a great deal of pleasure to introduce to you this man whom the Government has said is pre-eminent, and therefore we are very happy to have him talk to us this afternoon. Colonel John B. Youmans will speak first and will give us an introductory outline of nutrition. He will be followed by the other speakers on various phases, and then our guest speaker will close with a review of the factors that enter into the cure of this problem of nutritional deficiency.

### Introduction

JOHN B. YOUMANS, COLONEL, M.C.,  
Washington, D. C.

I think that perhaps my function here this afternoon could best be described as that of the frontispiece and the end piece of a book—something perhaps a little bit interesting and in a way decorative, but with the real meat of the book in between.

Nutrition is a basic biologic process which affects all living things and is a factor of fundamental importance in health and disease. There is a tendency for us as physicians, however, to have an interest in deficiency disease and not in nutrition, to consider nutrition as something divorced from clinical affairs and a matter for biochemists, physiologists, dietitians and home economists only. Such an attitude is incorrect and no more justified than an interest in heart disease and a lack of knowledge and interest in the circulation. Disease is present as soon as nutrition is not normal, just as heart disease is present as soon as the circulation is ab-

normal, though it may be impossible to detect this disease in its earliest stages. It is necessary, therefore, to have an understanding of nutrition as a background for an understanding of nutritional deficiency disease. Against such a background we can examine the nature and effects of disorders of nutrition, their development from mild disturbances to severe disease, the recognition and diagnosis of the deficiency states and the means of their prevention and relief.

In the time available today it is impossible to present even a partial account of the various phases of nutrition. There are, however, certain aspects which have a general bearing on and are important in the clinical application of nutrition, which I wish to discuss.

Although disease may be said to be present at the moment nutrition is inadequate, this does not mean at the moment food intake is inadequate.

\*Symposium presented during the meeting of the Medical Society of Virginia at Richmond, October 23-25, 1944.

Usually there is a physiologic reserve store set up against temporary periods of deficiency which are sufficient normally to tide over a period of diminished intake. Such reserve stores vary in size with the various nutritive factors and this part has an important bearing on the occurrence of various deficiency under conditions of deficient intake. For example, it appears that members of the Vitamin B complex, particularly thiamin, are less well stored than others so that a deficiency occurs sooner than do deficiencies of other nutrients, such as, for example Vitamin A.

In practice, however, this factor of reserve cannot be relied on too strongly for the following reasons:

1. The reserve may never have been established.
2. Slight and inconspicuous but long continued dietary inadequacy may have depleted the reserves.
3. The reserve may have been lost through some unusual circumstance as an illness or disease which caused increased utilization, destruction or loss and the reserve never reestablished.

Failure to establish a reserve is seen in infants who fail to receive an adequate endowment of iron from their mothers and whose diet in early post-natal life is incapable of establishing such reserves, in fact, may not ever meet current demands. Slight but long continued loss of reserves is seen in persons whose dietary intake of protein is relatively deficient for even months and years, until the protein reserves are exhausted despite a lack of actual existing protein deficiency or evidence of under nutrition. Chronic febrile illness, intestinal disease, or surgical operations may exhaust reserves which were at one time adequate and lack of attention to necessary intake subsequently may prevent a re-establishment of the reserves.

Such a situation, i.e., a loss of the reserve store of nutrients, is of the utmost importance to physicians whose patients are apt to be the very ones made vulnerable by loss of these reserves. Following the loss of reserves further shortages result in deficiency disease, actual pathologic states characterized by disturbances in structure of functions even though these may not be recognizable in these first stages. The effects of such early and mild deficiency disease are obscure and usually non-specific. They include: (1) disturbances in growth and maturation; (2) abnormalities of pregnancy and lactation; (3) interference with immunity and resistance to disease and (4) interference with convalescence and recovery. With more severe deficiencies there appear the beginning signs and symptoms of specific deficiency disease and in still more severe deficiency states these blossom into clinical entities such as pellagra, scurvy and beri-beri.

It is thus apparent that deficiency states are significant in two ways, first, in their own right as diseases *sui generis*, and second, in their effect on other diseases. While both types are of interest and importance to the physician the latter are of particular interest because, as described above, his patients are the very ones who are apt to be vulnerable on the score of lost reserves and particularly liable to develop actual deficiency disease which will effect the reaction of his patients to other disease and influence its course and outcome. Furthermore, such effects may well occur at levels of deficiency which are not clearly apparent in the way of specific signs of the deficiency. The speakers who will follow me will describe some of these relationships and the effects of such deficiencies in the various field of medical practice.

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### Nutrition In Relation to Medicine

WILLIAM B. PORTER, M.D.,

Professor of Medicine, Medical College of Virginia,  
Richmond.

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Resistance to disease is a term frequently used, but it has so many complexities that one hesitates to single out any one factor as being essential to its stability. I should, however, like to present certain evidence indicating that nutrition is fundamentally concerned with the development of disease, its

clinical course, and the restoration to a normal state of health.

One may define disease as being a failure of body structures to function normally which in turn is the result of functional failure, unaccompanied by histologic changes or failure accompanied by demon-

strable cellular disintegration. These effects may be the result of: (1) deficiency of some essential substance (pellagra) nicotinic acid; (2) protoplasmic poisons such as chloroform, alcohol, and bacterial toxins; and (3) the invasion of the body by pathogenic parasites.

It is the purpose of this discussion to indicate briefly the role of nutrition in the basic reactions to these potential causative factors of disease. The failure and final death of essential body functions as the result of a deficiency of at least one vital substance is best illustrative by pellagra. Here there is widespread cellular disintegration and great disturbance of many physiologic functions. The rapidity of recovery is truly startling and is at times so rapid that one wonders how such physical and physiologic recovery can so promptly occur. It has been appreciated for a long time that there are factors not understood which are concerned with the development of liver cirrhosis in alcoholics. If this were not true cirrhosis would be one of the great scourges of the entire world for there is such a large percentage of the population who consume what might be termed an excessive amount of alcohol.

Mann at the Mayo Clinic was the first to show that carbohydrates protect the liver against certain noxious agents. Recently our attention has been directed to the protective effects of complete proteins and the B. complex vitamins. Others are impressed by the beneficial effects of whole blood transfusions, particularly as a protective agent against bacterial toxins.

#### PARASITIC INVASION

It has been pointed out by Ashford and recently by Suarez that there is no constant relation between the number of worm infestation and the anemia and other signs of parasitism. We ourselves were impressed with this many years ago and felt there must be some other factor which modified the patient's

resistance to parasites. In 1928 we saw our first patient with severe parasitism incident to hookworm infection. At that time we were working with a liver fraction and this patient who had a hemoglobin of less than 10 per cent was put on liver supplemented with iron and an adequate diet. The patient made a rapid recovery and after he had recovered he was given a treatment for hookworm and he expelled more than 800 parasites. This convinced us that a patient's resistance could be so raised by supplementary substances, such as food, iron, and extracts of glandular organs, such as liver, that, even though he carried the parasites, he would have no adverse reaction to them.

Since that time this plan has been repeated on as many as 100 patients with similar results; even with animals the same situation exists.

One concludes from this that parasites become parasitic only in the event the patient's resistance is below a certain level and that this resistance is directly concerned with body nutrition.

Summarizing briefly: One may say that a deficiency of even one single vitamin, continuing over a period of time, can produce widespread cellular disintegration and disturbance of physiological function in many organs. Following the administration of the appropriate substance such as nicotinic acid in pellagra, prompt recovery ensues.

In the second place, nutrition is specifically concerned with the reaction of the body to noxious agents. This is best illustrated by the protection that can be had for the liver against alcohol, chloroform, and bacterial toxins by adequate diet and probably excesses of vitamins and transfusions.

Finally, the reaction to parasites is directly concerned with the state of nutrition and, in the solution of the parasitic problem, the economic status of the individual is equally as important as the so-called public health preventive measures.

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### Nutrition In Relation to Surgery

EVERETT IDRIS EVANS, M.D.,

Associate Professor of Surgery, Medical College of Virginia,  
Richmond.

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#### A. PREOPERATIVE MANAGEMENT OF SURGICAL of surgical patients:

##### PATIENTS

This problem revolves about two distinct groups

- (1) Well nourished
- (2) Malnourished



Relatively little attention would need to be paid to the first group, the so-called "well-nourished", if it were not for the fact that recent newer knowledge of nutrition has uncovered a situation in which we would question that there actually exists a large group of well-nourished individuals. "Food faddery", or simply poorly chosen diets, has resulted in a large number of the population actually not procuring an adequate diet, even though money and food were available. The economic pressure of a low income and the relatively high expense of food to large numbers of the population make it simply impossible for great numbers of our ward patients to secure an adequate diet. This may be considered an ugly statement of fact, but it is nevertheless true. Analysis of the plasma protein concentration of 240 ward patients in the Medical College of Virginia Hospitals may indicate how untrustworthy these data may be in estimating the protein reserves of what Dr. Forbes and I chose deliberately as a group of supposedly healthy normal individuals. Plasma protein concentration was determined by ordinary laboratory tests, and the results showed that the majority of patients who had come in for what are considered elective operations had normal concentrations of total plasma protein. However, when the total circulating protein was determined by including in our laboratory tests the estimation of total plasma volume, it was soon learned that there actually exists a deficiency in total circulating protein in these ward patients, because of a diminution in total plasma volume. We may presume on the basis of studies made by Whipple that there exists a dynamic equilibrium between tissue and circulating protein; we have concluded that our data probably indicate a deficiency in tissue protein reserves in these patients who ostensibly have normal reserves because of a normal concentration of plasma protein.

We are of the opinion that these data may explain the often observed phenomena of an apparently well-hydrated individual possessing a normal plasma protein concentration prior to operation, but, post-operatively, early and rapidly develop hypoproteinemia. The plasma volume of persons with low tissue protein reserves may possibly diminish in order that the oncotic pressure remain at a more optimum level. This, we believe, to be the case because hypoproteinemic individuals sometimes have a decreased plasma volume.

These data illustrate how dangerous it may be for the surgeon to assume that tissue reserves are adequate for a surgical procedure in the face of normal plasma protein concentration. Therefore, if possible, patients who are to undergo major surgery should be placed on the best possible diets before surgery is undertaken. Unfortunately, in many patients this is impossible because they either cannot or will not eat. Therefore, the only practical pre-operative management entails the intravenous administration of large amounts of glucose, vitamins, and protein—and red cells if the patient is anemic. Intravenous protein is best administered as amino acids, and about 150 grams per day is to be given. Plasma is a poor substitute because of its unavailability and expense (150 grams, 100-150 dollars a day). Amino acid solutions are now available (Mead Johnson and Stearns). Vitamin requirements in ill patients undergoing surgery may be extremely large, but probably are no wise as important as protein. With our extreme interest in protein therapy at the present time, we should not forget that probably the greatest single advance in the preoperative management of surgical patients has been the use of large and frequent *whole* blood transfusions.

Unfortunately, no feasible method is yet available for the administration of fat by the intravenous route. Let us not forget that no one has yet developed a preparation for intravenous administration that rivals in any way the remarkable efficiency of a good wholesome diet, prepared by a person who knows how to prepare food for a healthy family; therefore, if possible, give food by mouth—not by vein.

Why is nutrition so important as a preoperative measure in surgery?

Proper nutritive balance, by food, intravenous protein, sugar, and vitamins, or whole blood greatly extends the indications for surgery. Extensive surgery imposes a great risk on healthy persons. This risk becomes prohibitive if the patient is malnourished. A week spent preparing a malnourished patient with an adequate diet may often permit the safe prosecution of an extensive surgical operation, so that operative shock may be entirely abolished. Also, the operative management of many procedures is greatly facilitated if tissues have been restored to their normal tone and texture (viz. gastrointestinal anastomosis).

## B. POSTOPERATIVE MANAGEMENT OF SURGICAL PATIENTS

The discussion here may be divided into two categories: (1) those patients who cannot take food by mouth, (2) those who can eat.

Our aim with both groups is to eliminate the immediate postoperative period of *acute starvation*. Education of both surgeons and patients is necessary here. It is simply foolish to believe that, after every abdominal operation, the patient must be starved for three to four days. Our goal should be that patients take an adequate diet by mouth as soon as possible after operation, and by this we do not mean only fruit juices and meat broths. These contain little material of any value. Most surgical patients will generally eat if one or two requirements are met.

(a) *Early Ambulation*. We must get patients out of bed as soon as possible after operation, and that means after two or three days for most patients, except the very ill.

(b) *Serving of Hot, Appetizing Food*. Perhaps this is the crux of the whole matter. We shall not dwell on this matter at length, because we will offend the sensitivities of most hospital dietitians. If ever a revolution in hospital management was needed, it is in the manner of preparation and serving of food to patients (and I might add for what it is worth—to internes and residents). Too often earnest attention is devoted to the calculation of a patient's caloric and protein needs, only to discover that his requirements are not met simply because he leaves uneaten on his tray most of the proffered food.

In certain patients, resort must be made to alim-entation by an indwelling jejunal tube. A rather complete diet can be given by this method. Dr. Spence of our interne staff has elaborated such a diet which has proved quite successful in the post-operative management of many of our surgical patients. With this diet one can easily get in 150-200 grams protein daily; nitrogen equilibrium and a

positive balance has been readily attained. While whole blood transfusions are extremely important, it should be remembered that if building materials are made available, hemoglobin can be elaborated by the surgical patient, often in large amounts.

In certain surgical patients, such as those who have suffered extreme trauma or burns, the daily nutritional requirements may be considerably increased, to 300 to 500 grams of protein daily, if body wasting is to be avoided. If infection supervenes, large amounts of all food essentials must be made available, especially protein and vitamins. Postoperative complications, including infection, may often be avoided by the judicious feeding of surgical patients so that rapid wound healing is enhanced. Antibodies of protein nature cannot be elaborated if sufficient protein is not made available. (Paul Cannon.)

Finally, an ounce of prevention is worth a pound of care. Once bodily stores are depleted of protein, fat, and vitamins, they are replaced with great difficulty. Witness how difficult it is for a patient to regain weight once lost by illness. Our aim as surgeons, therefore, should be to bring a patient to the operating room in as good a nutrition state as possible, at the operation cause as little damage as possible, and begin the feeding of a highly nutritious, appetizing diet as early as possible postoperatively, so that the period of convalescence may be short.

In our present vigorous interest in nutrition, it is perhaps proper to recall that we may now be returning to the medical philosophy of classical times, when the doctor was chiefly concerned with diet, not only the regulation of a sick person's food, but with man's whole routine of eating and living. If patients are given the proper foods and the proper exercise, we may come to believe with the Greeks that "Nature is enough for everyone in everything."

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## The Effects and Manifestations of Nutritional Deficiencies In Obstetrics and Pediatrics

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Since this subject is to be covered by one individual, it is presumed that a pediatricist was selected because of his interest not only in the baby and

child but in the development of the fetus which is to become his at the time of birth.

The development of the fetus depends a great

deal upon the health of the mother. Good health is based upon good nutrition. Ill health will not furnish the fetus the best for development.

Since the fetus is considered parasitic on its mother, that is, taking its nutritional needs from the mother at her expense, it is necessary that the mother receive all that is needed so that the fetus obtain optimum development.

Gross nutritional disturbances are rare in our normal women, but there is evidence that minor deficiencies may exist. Such minor deficiencies, which in a normal woman would take some time to develop, would be exaggerated by the increased demand of the fetus during pregnancy.

The diet of the pregnant woman, therefore, should be increased and balanced as to the necessary food elements.

Even though the fetus takes its nourishment from the mother at her expense there may be enough diminution in the mother's nutrition so as to affect the fetus.

It is estimated by McCollum that there is a rise in basal metabolism which is 23 per cent higher at term than at the fourth month with an average gain in weight of only 14 per cent. The normal desirable gain in weight by some authorities is from 15-25 pounds.

The fats and carbohydrates supply the energy in the normal diet, being a source of calories and generally sufficient. The fats help the absorption of vitamins and the carbohydrates are protein savers. Obesity and excessive gain in weight in the woman can be controlled somewhat by the regulation of fats and carbohydrates in the diet.

Garry and Stiven in a review of available data find that the weight of the newborn is not influenced by the maternal diet unless there are extreme deficiencies.

Protein is the important factor in cell growth. Metabolic studies indicate increased protein requirements during pregnancy and lactation. Williams states that protein deficiency may lead to nutritional edema and tends to anemia, lowered resistance to disease, and poor muscle tone and milk supply.

Barker found poor protein diets in about 50 per cent of his private and clinic patients, the symptoms of which cleared up under high protein diet.

A high protein diet tends to increase the milk supply while a decrease lowers it. Animal proteins such as meat, eggs, and dairy products should sup-

ply at least one-half of the protein in the diet.

Minerals are sufficient in general diet but during pregnancy and lactation calcium is a most important element. With the assimilation of calcium, phosphorus and vitamin D are closely linked. Nicholas *et al* have shown a decrease serum calcium in the last months of pregnancy with a return to normal after termination of pregnancy.

Mendenhall and Drake showed that such complaints as muscle soreness, spasm, numbness, tingling, and neuritis could be cleared by giving calcium and viosterol to these patients. A daily intake of 1.5 to 2.0 grams of calcium is necessary to supply the needs.

Observers have noted that the amount of calcium and vitamin D in the mother's diet affects the density of the infant's bone and structure of its teeth.

Mellanby has stated that calcium and vitamin D are often deficient in mother's diet and feels that this is one of the predisposing factors in the development of rickets.

Grant and Goeltsch have noted a greater tendency to rickets in rats born of mothers on a diet low in calcium, phosphorus, and vitamin D. When calcium is adequately supplied in the diet, phosphorus is usually sufficiently supplied. Much work has been published on the relation of maternal diet to the development of anaemia in the mother and the infant.

Murphy and Bowes demonstrated that anaemia was twice as prevalent among mothers who were taking an inadequate diet as compared with those on an adequate diet.

Neale and Hawksby give as the cause of anaemia in the mother: transfer of maternal reserve to fetus, poor diet, multiple and twin pregnancies or gastric anacidity or hypoacidity. Parsons and Hawksby give as a cause of anaemia in the infant either a deficient antenatal storage of iron or a deficient postnatal supply, or both in the presence of anaemia in the mother.

Mackay has shown that there was a lower level of hemoglobin in every month of the first six months of an infant's life, born of an anaemic mother, than of one not anaemic. Both maternal and infant anaemia can be prevented by adequate prophylactic doses of iron. The minimum requirement of iron during pregnancy seems to be from 15-20 milligrams, daily.

Vitamin A deficiency is probably not serious due



to its widespread distribution and the distribution of its precursor carotene in our common foods. However, Wolbach and Howe have shown changes in the structure of the developing teeth of vitamin A deficient rats and guinea pigs.

Mellanby has also shown defective teeth in rats born of mothers on a diet deficient in vitamin A, and feels that vitamin A deficiency is responsible for absent or defective enamel and dentine in the human.

During pregnancy and lactation it is believed that vitamin A requirements will be adequately met by a diet supplemented by 4-6 grams of cod liver oil or its equivalent.

Since it has been shown by Cowgill that vitamin B<sub>1</sub> or thiamine chloride requirement depends on the basal metabolism and caloric intake, the increased metabolism in pregnancy and lactation demands an increase in thiamine.

Polyneuritis has developed during pregnancy, and such minor symptoms as aches, pains, apathy, and discontent are sometimes relieved by additional thiamine. In a nutritional study of pregnant women, Williams and his co-workers found practically one-third of their patients on an inadequate diet, and 30 per cent of those had moderate to pronounced nausea and vomiting compared with 10 per cent of those with adequate intake. Such symptoms as fatigue, cramps, paraesthesia, and dyspnea were found more frequently in those with low vitamin B<sub>1</sub> intake.

The amount of vitamin B<sub>1</sub> in the milk of lactating women depends to some extent on the amount of vitamin B<sub>1</sub> in the mother's diet as there is essentially no storage of this vitamin in the body. The stimulating action of B<sub>1</sub> on secretion of milk has been observed.

Since riboflavin is associated with oxidation processes of the cell the increased metabolism during pregnancy should probably increase the requirement of this vitamin. Forms of keratitis have been described as evidence of this deficiency.

A diet containing an adequate amount of milk, meat, eggs, whole grain products, and vegetables should supply the vitamin B complex in sufficient amounts.

Snelling and Jackson found a slight fall in the ascorbic acid level of the blood plasma toward the end of pregnancy, and a further drop during and after labor. This may be explained by the increased

needs of the infant who will show a higher plasma level than its mother even though she is on a low vitamin C diet. This further explains why scurvy in the breast fed infant is so very rare. At one time it was thought it couldn't occur.

Vitamin C is water soluble and is not retained in the body for long, therefore it seems that the vitamin C intake should be increased during pregnancy and lactation. The diet should contain orange, grapefruit, or tomato juice, as well as other fruits and vegetables.

Several observers have reported on the use of wheat germ oil which contains vitamin E in threatened abortion, and suggest that it is needed in normal pregnancy.

Vitamin K has brought about a reduction in the incidence of hemorrhagic disease in the newborn. It can be administered to the mother before the onset of labor or during labor with a definite effect on the prothrombin time of the infant. Vitamin K can also be given to the newborn at birth to prevent the disease.

An old saying "for every child a tooth" has some truth in it since dental decay is increased during pregnancy. Toverud has found defects in the teeth due to deficiencies in the maternal stores of essential food elements, such as, minerals and vitamins. Daro, in an antepartum clinic, found teeth and gums in a poorer condition in those who were partaking of an inadequate diet in comparison to those who were eating plenty of milk, raw fruits, and vegetables.

Mellanby feels that dental caries in the child is due to deficiencies in antepartum diets. From as early as the fourth month of fetal life the teeth are calcifying and the jaw bones are ossifying. Howe states that it is the duty of every medical practitioner to see that the normal processes of growth and development go on uninterrupted and that these processes are influenced more strongly by nutritional states than by any other factor.

Studies have been made in clinics regarding diets on groups of pregnant women.

Ebbs *et al* in Toronto and Balfour in Great Britain have supplied additional foods to diets of pregnant women. To their ordinary diets, milk and eggs containing vitamin A and D, foods rich in vitamin B, and fruits were supplied. Striking results were obtained. Ebbs reports on women during the last half of pregnancy that the incidence of miscarriages, premature and stillbirths, the number of infections

in the mother, as well as her general condition, mental and physical, were much better than those of a control group.

Balfour studying groups of pregnant women in England and South Wales reports that the maternal death rate in 10,384 obstetrical cases in which the supplemented diet was supplied to needy mothers during the last three months of pregnancy was 1.66 per thousand total births as against a rate of 6.15 among 18,854 control cases in the same districts during the same period. One death from sepsis in assisted group as against 45 in nonassisted group was observed as well as 43 per cent less stillbirths and neonatal deaths in the assisted group.

It seems from the above that pregnant and lactating women require more calories, proteins, minerals and vitamins than the nonpregnant women.

In feeding the infant, human milk is considered the ideal food supplying the essential food elements for the early period, provided the mother is receiving the nutrition that gives her all the necessary elements. It is found, however, when the infant grows older, human milk will not meet the infant's needs.

Of all the elements, vitamin D may not be adequate in human milk during the early period of nursing as the mother may not be able to get enough vitamin D from the effects of sufficient ultra-violet rays or vitamin D in the food. Therefore, additional vitamin D can be given the infant.

The baby at birth has sufficient iron storage to maintain an adequate hemoglobin level for several months; after that time, iron in some form should be added to his diet in order to prevent the development of anaemia.

Through observation of the development of the infant it is believed that additional foods should be added to the breast fed infant's diet at three to four months of age and vegetables and fruits shortly afterward. These additional foods not only add calories but bring to the infant an increase in minerals and vitamins which, should there be a slight shortage in the breast milk, will be taken care of.

Some observers have found that additional foods can be added to breast milk diets earlier in the infant's life with satisfactory response of the infant's development.

When artificial feeding such as cows' milk is substituted for human milk, nutritional disturbances are more frequently met with. The chief nutritional

disturbances are protein, mineral, and vitamin deficiencies.

The normal infant progressing adequately on the breast requires about 2 to 2.5 grams of protein for each kilogram body weight. Since human milk protein is considered biologically 20 per cent superior to cows' milk protein, it makes the infant's requirement 2.5 to 3 grams of protein per kilogram body weight, which is present in 1½ ounces of cows' milk. Many pediatricists prescribe more than this so there will be no protein want in the diet.

When the protein is below the required level nutritional disturbances develop.

Since the development of the tissues of the body is dependent upon protein ingestion, an insufficiency of the protein content will bring about slow growth, muscles become flabby, secondary anaemia develops, and resistance to infection is decreased. With a prolonged protein deficiency diet there will be the development of oedema due to the decreased blood plasma proteins. The content of iron in cows' milk is lower than in human milk and is less assimilable. Therefore, a greater need of iron is required to be added to the diet to prevent iron deficiency or nutritional anaemia. Iron can be added to the diet in an inorganic state as ferrous sulphate or in medium of egg yolk. The latter not only contains iron, but also pigment which helps to build up hemoglobin, giving it an added advantage over inorganic iron. Egg yolk is usually added to the diet during the third month of life.

There is plenty of calcium and phosphorus in an infant's diet when he is given the generally prescribed amount of milk, but it is not readily assimilated unless there is sufficient vitamin D present.

The absorption of the calcium from the intestines and deposition into the bones is dependent upon vitamin D. Lack of sufficient vitamin D will bring about the picture of rickets, a disease of infants and children consisting of a disturbance of calcium and phosphorus metabolism, which prevents the normal deposition of calcium salts in the growing parts of the skeleton. The skeleton becomes weak, unable to withstand stress and strain to which it is ordinarily subjected, yields and deforms.

These disturbances can always be improved, or if not too far advanced, corrected by adequate doses of vitamin D which is found concentrated in the fish liver oils.

Tetany is another condition found in infants and

small children. It is produced by lack of sufficient calcium in the blood stream. The addition of calcium alone to the diet will not remove the symptoms but there must also be sufficient vitamin D present. Tetany is always accompanied by rickets but not *vice versa*. The symptoms of tetany are due to a state of increased excitability of the nervous system. In the young infant, tetany is characterized by convulsions or may have symptoms of laryngospasm fairly marked at times or only present when it cries. In older infants carpopedal spasm is more commonly found. Other signs such as Chvostek, Trousseau, Erb and Peroneal demonstrate increased irritability of the nerves.

Such symptoms as redness of the conjunctivae with irritation and swelling of the eyelids, with the patient complaining that the eyes feel as if they are full of sand, may indicate early xerophthalmia, a condition due to vitamin A deficiency. If the deficiency is not relieved, the cornea will first become cloudy, to be followed by necrosis and ulceration resulting in blindness.

A dry and scaly skin condition consisting of a metaplasia and hyperkeratinization of the epithelium with atrophy of the pilosebaceous glands has been attributed to vitamin A deficiency.

Night blindness or nyctalopia has been recognized to be due to vitamin A deficiency. Jeans thinks that, from the results obtained through the use of the photometer, a fairly large percentage of children are suffering from some vitamin A deficiency.

The vitamin C deficiency disease, scurvy, when advanced shows hemorrhages in the epiphyseal end of the bone, between the periosteum and the bone, in the skin or from the orifices of the body. Advanced scurvy is quite rare as the disease is well known and vitamin C will prevent or cure it.

The symptoms of the early or preclinical stage of scurvy are not so definite. However, such symptoms as loss of appetite, failure to gain in weight, irritableness, difficulty to please, vague symptoms often attributed to teething, apprehensiveness to an ap-

proach, tenderness of legs, crying a great deal, possible swollen gums along with a history of vitamin C deficiency, give a suspicion of scurvy. The diagnosis can be made definitely by examining the blood for the vitamin C content.

Early or preclinical scurvy is more prevalent than it is recognized. During the recent poliomyelitis epidemic, four cases were referred to the hospital with the diagnosis of poliomyelitis which turned out to be proven cases of scurvy.

The symptoms of anorexia, failure to gain weight or the losing of weight, restlessness, fretfulness, irritableness, and an apathetic attitude have been attributed at times to vitamin B<sub>1</sub> or thiamine chloride deficiency and relief has been obtained through drug administration or diet.

Definite symptoms of beri-beri with paralysis, oedema, and cardiac disturbances are very rare in the practice of pediatrics.

Riboflavin or vitamin B<sub>2</sub> deficiency may occur in the diet. Perleche, ulceration at the angles of the mouth, or what is now described as cheilosis, has been shown to be due to riboflavin deficiency and has been noticed in children. Other symptoms such as changes in the mucous membranes of the mouth and areas of seborrhea in the folds of the skin may be present.

The sudden appearance of an erythema, sharply defined even though mild and resembling sunburn, appearing on the dorsal surface of the feet, ankles, and distal ends of the lower legs and on the dorsal surface of the hands, wrists, and distal surfaces of the lower arms, suggests the diagnosis of pellagra, even though constitutional symptoms are lacking. The deficiency of niacin in the diet will bring about these changes and, unless the diet is improved to contain niacin or the pellagra preventive vitamin, the symptoms will become aggravated.

These nutritional deficiencies which have just been superficially reviewed, occur frequently enough in obstetrical and pediatric practice as to warrant supervision of the patient's diet by the practicing physician.



## Nutrition In Preventive and Industrial Medicine

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Nutrition as a factor in the prevention of disease and its relation to medicine in industry has failed to receive the attention which it rightfully deserves. Malnutrition is one of the outstanding problems in public health and preventive medicine today. Unfortunately, it is not always recognized as such, mainly for the reason that we do not know the extent of the disabling effects of malnutrition either from the physical or economic standpoint. Again, many cases of the deficiency diseases are not recognized as such by the physician. Unless physicians recognize the place nutrition has in the prevention of disease, as well as its place in the cure of disease, continued progress in this field cannot continue. A real challenge in this respect exists.

It long has been recognized that various types of malnutrition exist. We may roughly classify two types: first, that caused by a lack of the essential food elements; and second, that caused by other factors and conditions, such as physical exertion, organic disease, pregnancy, chronic alcoholism, and others. Some very interesting information has been obtained from a number of surveys made in Virginia in an endeavor to obtain knowledge as to food consumption in respect to the essential food elements. I mention three of these briefly: A survey was made of the food selected at the lunch counters in a number of Virginia industries. Less than one-fourth of the employees observed selected a lunch which could be rated as good. Only one industrial plant cafeteria came anywhere near giving them one-third the day's food needs. It may be of interest to note that the men selected better diets than the women. Surveys made in the schools of the State show that only a small percentage of the pupils are getting the amount of milk, eggs, fruits and vegetables recommended by the National Research Council. Definite riboflavin deficiencies were observed recently on a dairy farm in one of the most prosperous counties of the State. Distinctive cases of pellagra occur quite frequently.

Such deficiency diseases are, of course, quite easily recognized. There are, however, many deficiencies existing, either alone or in conjunction with other

diseases, which are not always recognized. The chief concern probably is the types of subclinical vitamin-mineral deficiencies which frequently elude diagnosis. The patient may simply be called a neurasthenic or such term applied as "inadequate personality". It is possible for subacute deficiencies to exist even when a person shows no gross signs of ill health. Visual acuity, mental health, and morale may be impaired by nutritional deficiency. It is quite well known that a lack of certain dietary factors may cause increased susceptibility to infections.

SYMPTOMS AND SIGNS SUGGESTIVE OF EARLY DEFICIENCY  
CONDITIONS IN INFANTS AND CHILDREN

## SYMPTOMS

1. Lack of appetite.
2. Failure to eat adequate breakfast.
3. Failure to gain steadily in weight.
4. Late period of sitting, standing, walking.
5. Aversion to normal play.
6. Chronic diarrhea.
7. Inability to sit.
8. Pain on sitting and standing.
9. Poor sleeping habits.
10. Repeated respiratory infections.
11. Backwardness in school.
12. Abnormal intolerance of light, photophobia.
13. Abnormal discharge of tears.

## PHYSICAL SIGNS

1. Lack of subcutaneous fat.
2. Wrinkling of skin on light stroking.
3. Poor muscle tone.
4. Pallor.
5. Rough Skin (toad skin).
6. Hemorrhage of newborn.
7. Bad posture.
8. Nasal blackheads and whiteheads.
9. Sores at angles of mouth, cheilosis.
10. Rapid heart.
11. Red tongue.
12. Square head, wrists enlarged, rib beading.
13. Vincent's angina, thrust.
14. Serious dental abnormalities.
15. Corneal and conjunctival changes—slit lamp.

SYMPTOMS AND SIGNS SUGGESTIVE OF EARLY DEFICIENCY  
CONDITIONS IN ADOLESCENTS AND ADULTS

SYMPTOMS

1. Lack of appetite.
2. Lassitude and chronic fatigue.
3. Loss of weight.
4. Lack of mental application.
5. Loss of strength.
6. History of sore mouth or tongue.
7. Chronic diarrhea.
8. Nervousness and irritability.
9. Burning, prickling of skin, paresthesias.
10. Night blindness.
11. Abnormal intolerance of light, photophobia.
12. Burning or itching of eyes.
13. Abnormal discharge of tears, lacrimation.
14. Muscle and joint pains, muscle cramps.
15. Sore bleeding gums.
16. Tendency to bleed.

PHYSICAL SIGNS

1. Nasolabial sebaceous plugs.
2. Sores at corners of mouth, cheilosis.
3. Vincent's angina.
4. Minimal changes in tongue color or texture.
5. Red swollen lingual papillae.
6. Plossitis.
7. Papillary atrophy of tongue.
8. Stomatitis.
9. Spongy, bleeding gums.
10. Muscle tenderness, extremities.
11. Poor muscle tone.
12. Loss of vibratory sensation.
13. Increase or decrease of tendon reflexes.
14. Hyperesthesia of skin.
15. Bilateral symmetrical dermatitis.
16. Purpura.
17. Dermatitis; facial butterfly, casual necklace, perineal, scrotal, vulval.
18. Thickening and pigmentation of skin over prominences.
19. Nonspecific vaginitis.
20. Follicular hyperkeratosis of extensor surfaces of extremities.
21. Rachitic chest deformity.
22. Anemia not responding to iron.
23. Fatigue of accommodation.
24. Vascularization of cornea.
25. Conjunctival changes.

Characteristic effects of a deficiency of vitamin A may develop rather slowly—conjunctival thickening and pigmentation, and hyperkeratosis follicularis.

An insufficient amount of the vitamin B complex may show up first by loss of appetite, increased fatigability and disturbances characteristic of the psychoneuroses. The tongue may become swollen

and red, followed by diffuse glossitis and ulceration. This may be accompanied by fissures and cheilosis.

The manifestations of vitamin C (ascorbic acid) deficiencies may consist of slight swelling, and blood oozing between the teeth at slight pressure. Later manifestations are swollen gums consisting of bags of blood. Continuation of this condition causes a break in contact between the gums and teeth, with consequent collections of tartar on the teeth below the gum margins. During the progress of these conditions involvement of the alveolar processes occurs which causes loosening of the teeth.

Many lesions involving the eyes, mouth, skin, mucous membranes, and nervous system have been shown to have a nutritional deficiency basis.

Very often nutritional deficiencies are present with other diseases. In a recent study at the Charity Hospital, New Orleans, 67 per cent of the 200 patients examined showed clinical manifestations of an insufficient supply of riboflavin and niacin. Signs of deficiency diseases were present in all persons with hyper-thyroidism, cirrhosis of the liver, and chronic alcoholism, and in two-thirds or more of the patients who had infections, diabetes mellitus, carcinoma, and diseases of the gastrointestinal tract. This may be easily understood when one realizes such diseases interfere with the ingestion and assimilation of food.

Not only should we think in terms of vitamin deficiencies, but of the minerals. Iodine deficiency is well known and probably generally recognized. The widespread prevalence of constipation may be in part due to the low mineral content of refined cereals and sugar.

Tooth decay is a menace to health and may be considered among our leading "diseases". Tooth structure may be definitely influenced by proper and adequate nutrition during the prenatal period. "The proper time to prevent deficiencies is not after the child is born, but before or immediately after the beginning of pregnancy."

Manganese is one of the trace elements essential to production of viable young animals, and probably has somewhat the same importance in human nutrition.

In studies of large groups, the prevalence of hypochromic anemia is a reasonably accurate index of a dietary inadequacy of iron. Inadequacy of other nutrients, as thiamin or other members of the B complex, may also result in anemia of this type.

That nutritional deficiency will result in a lowered resistance to infection goes without saying. The presence of any infection increases the need of the body for many of the food elements. The amount of vitamins A and C in the blood is lowered markedly by infection, and there is some evidence of increased need for vitamin B<sub>1</sub>.

Unfortunately, many of our therapeutic diets (as restricted diets for ulcer, diabetes, obesity and allergy diets) have led to nutritional deficiencies. This should be carefully guarded against by the physician.

Industrial workers have long been the object of special attention as concerns research in the field of nutrition. Certain groups of workers probably need special diets. It is quite generally recognized that men working in high temperatures need not only more food, but an extra supply of sodium chloride to replace that lost through perspiration. Failure to maintain NaCl level of blood will result in heat exhaustion.

Clinically, it is recognized that a diet adequate under normal conditions may be inadequate when disease is present, or under abnormal conditions. What has not been recognized is that many people in their work are exposed to toxic agents and other environmental conditions which are not normal. Certain of these toxic agents lose their toxic effects when the diet is modified. The effective protection against toxic agents by adequate and proper dietary changes has been demonstrated time and time again.

Treatment of trinitrotoluene poisoning has included a high carbohydrate, low-fat diet with additional vitamin B complex and vitamin C and additional protein. English clinical investigators have recognized the possible role of high protein intake in liver protection against damages caused by certain toxic agents. It is known that lead workers need large amounts of calcium, preferably in the form of milk, to remove lead from the blood stream.

Limited data available indicate small losses of vitamin C, thiamin, niacin, riboflavin and pantothenic acid with prolonged sweating. It is probably not sufficient to affect adversely an individual whose dietary intake is adequate, but may be a consideration if the diet were consistently below adequacy. Therefore, it would seem wise to be sure of an excess of these factors in the diet in the case of industrial workers in high temperatures or under continuing physical exertion.

Many studies have been made of the effects on physical performance of a diet deficient in vitamin B complex. These show that subjects engaged in hard physical labor suffer from easy fatigue, irritability, lack of energy, anorexia, muscular and joint soreness, as well as loss of ambition, when deprived of the B group of vitamins.

It is reasonable to suppose that shift work, irregular meals, meals consisting of doughnuts and coffee, or soft drinks and pastry, must have an adverse effect upon the health of the American worker. When inadequate diets are brought up to adequate levels in industrial plants, we should expect greater working efficiency, fewer absences from work, and a decrease in the number of accidents. Steady nerves and good vision are two important requisites for any worker to prevent industrial hazards. Changes in occupation, especially those that require more concentration and exertion, impose a strain on the human organism. A change in habits and hours of work will naturally also impose additional strain.

It must be remembered that speed-up of work, insufficient rest and other conditions of metabolic stress produce an increase in the body's nutritional requirements. Employees working at very high temperatures, for example, consume much larger quantities of food than those working at lower temperatures.

It is difficult to tell how closely the various occupational diseases may be tied in with nutritional deficiencies. There is little evidence available indicating the true relationship between "hidden hunger" and the incidence of sickness, absences and accidents, although that which does exist is positive in character. Sir John Boyd Orr, in an article "Trends in Nutrition" in the January 18, 1941, issue of the *British Medical Journal*, states: "The improvement of the diet of workmen whose diet was not previously up to the standard for health is followed by increased output without any conscious increased effort, and also by a reduction in the number of accidents."

According to a report by Brundage, Reprint 1765, *Public Health Reports*, August 21, 1936, persons in ill health are prone to accident, as shown by the findings that those who have the most accidents are those who pay the most visits to the medical department. Still other reports also show that those who have poor health records have poor safety records.

In the Servel plant, after a nutrition program was



carried out for four months, absenteeism had dropped 17 per cent. In another plant in Seattle, Washington, where labor turnover and absenteeism were high, the installation of a modern cafeteria brought labor turnover down from 12.5 per cent to 5.9 per cent in six months, and absenteeism from 9 per cent to 4.1 per cent.

Fewer absences from respiratory diseases and high production records in one shipyard are credited to the good food service maintained.

Dr. Tom Spies has recently reported on the successful nutrition rehabilitation of 100 men previously unable to work because of nutritional deficiencies.

The U. S. Public Health Service has been collecting information for some time on the frequency of sickness causing disability among 200,000 male industrial workers. These show that sickness from respiratory diseases constitutes 42 per cent of the total illness, while digestive diseases account for 13.5 per cent. Both of these are at least related to food habits.

The giving of a supplementary feeding in some industrial plants has resulted in the workers being less tired, in better spirits, and more attentive to their work.

The diagnosis of one clinical syndrome denoting nutritional failure necessitates a thorough search for others. Many undernourished people may never develop clinical signs of deficiencies.

Let us assume that a person may have a nutritional deficiency for years before it is detected. It may show up as such or through some other disease. The best practice, then, is to teach good nutrition—a wholesome well-rounded diet—to all of our patients as good preventive medicine, rather than wait for these deficiencies to show up.

Selecting foods wisely is not enough. Food values are diminished by storage, cooking and other processes. For instance, in one study it was found the loss of vitamin C from apples was 91 per cent if made into applesauce or apple pie, or 80 per cent if the apples were fried. The thiamin loss in apples was 20 per cent just in storing for 12 weeks. As much as 43 per cent of the thiamin present in roast pork may be destroyed in the roasting process.

Mackie says: "It is the responsibility of the physician to inform himself concerning specific nutritional requirements and to be competent to instruct the layman in lay terminology and household weights and measures. The responsibility of the medical profession is far wider than the mere recognition and treatment of the clinical manifestations of nutritional failure."

The recognition by the physician of the nutritional deficiency diseases and the knowledge of the effect of nutrition on diseases cannot be over emphasized. Yet this is not enough. This knowledge must be applied in the prevention of disease, whenever and wherever effective results can be obtained.

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### Conclusion

JOHN B. YOUMANS, COLONEL, M.C.

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We have heard a discussion of nutrition and nutritional deficiency disease as it concerns the various phases of medical practice. I should like to recall to you the emphasis which was placed on nutrition as compared with nutritional deficiency disease in the generally accepted sense. There was little said of pellagra, or beri-beri, or scurvy per se, but much about nutrition and its relation and effect on other disease, its effect on the incidence of disease, on the course and complications and on convalescence and recovery.

Such a relationship imposes a number of problems and objectives of both a practical and a theoretical nature. One set of problems and objectives

is the further study of these relationships so that a better understanding is had of their nature, their extent and their mechanism. Why, for example, should such an operation as an appendectomy cause a greater negative nitrogen balance than a herniorrhaphy? What is the source of the nitrogen lost following a fracture of the femur? What, if any is the role of vitamins in the loss of weight and atrophy that follow trauma and infection? How far should we go in attempting to combat loss of nitrogen and loss of weight by forced administration of food, by oral or other routes, to the extent of 200-300 grams of protein and as much as 10,000 calories? What foods are protective against the noxious agents of infection?

Another set of problems are those concerned with the diagnosis of the nutritional deficiency disease in the population and in our patients. Reference has been made this afternoon to a study of the incidence of one nutritional deficiency, namely, protein deficiency. Data on the incidence of other deficiencies are desirable if we are to know the nutritional background of our patients and the possible liability and complication of a nutritional deficiency disease. Furthermore, it will be desirable to know not only that nutritional deficiency exists, if any, but the kind that is present, because such knowledge may forewarn us as of the effect to expect and the methods to be taken for their prevention and relief.

Any attempt to determine the incidence of deficiency disease is dependent on methods of detection or diagnosis. In the earliest or slightest degrees of a deficiency the symptoms in individual cases are as yet not recognizable though they may be suspected from a knowledge of the dietary and non-specific effects referred to in my opening remarks.

In a slightly more severe form or advanced stage signs or symptoms of the deficiency begin to raise themselves above the horizon though but slightly. Though not pathognomonic nor even highly specific, such signs and symptoms as papular, perifollicular hyperkeratosis, corneal vascularization, cheilosis, angular fissures of the mouth, glossitis and gingivitis, suggestive dermatitis of exposed areas, dental caries, significantly altered reflexes, muscular weakness of the extremities, sensory disturbances and otherwise unexplained edema, may be and often are manifestations of nutritional deficiency disease. Similarly various symptoms, though often lacking specificity, are indicative of an actual nutritional deficiency and call the attention of the alert physician to a possibility which must be carefully investigated.

Besides these symptoms and physical signs of deficiency states, there are laboratory tests which will reveal the presence of actual damage or disease resulting from a deficiency, even before the physical evidence mentioned above occurs. At present fairly satisfactory laboratory tests are available for the following deficiency diseases: Vitamin A deficiency, thiamin, riboflavin, niacin and ascorbic acid deficiency, Vitamin D and K deficiencies, protein deficiency and deficiencies of calcium and iron. Of such laboratory tests among the commonest used are the x-ray for Vitamin D and calcium deficiency, examination of the blood for the anemia of iron deficiency

and the various prothrombin tests for a deficiency of Vitamin K. Very simple tests are now available for total serum protein. By the technique of Van Slyke one can quite simply and accurately determine the total serum protein, hemoglobin and hematocrit in a minute or two by dropping a drop of blood in a copper sulfate solution to determine its specific gravity. Tests of the concentration in the blood or the excretion in the urine of Vitamins A and C, and of thiamin and riboflavin, are within the capability of any good hospital laboratory. An alternative test for Vitamin A deficiency is the test for night blindness with an adaptometer. Although these tests are not without their limitations, they are valuable when properly used and interpreted and are particularly applicable to individual patients because of the opportunity to repeat them and to control them with the history, physical examination and a critical therapeutic trial.

Recognizing that nutritional deficiency disease exists in a mild and even sub-clinical form it is important to determine if possible how common it is, the relative incidence of deficiencies of the various nutrients and the degree and manner in which different elements of populations such as children, pregnant and nursing women, workers in special industries, and other groups are affected. It is clear that for the sub-clinical deficiency states this can be distinguished only by inference. In the past such information has been obtained mainly by dietary and food consumption records. Though, valuable, particularly with respect to the etiologic aspects of deficiencies, this method does not give as reliable evidence of the existence of actual deficiency states as objective signs, symptoms and positive laboratory tests. Such dietary studies are the basis for reports of nutritional deficiencies in high percentages of people in this country. Some doubt has been expressed whether deficiencies are actually as numerous as indicated by such studies. However, by detecting the cases of hypoclinal deficiency through the use of the laboratory test and clinical signs just described a better idea of their number and frequency can be gotten. If the number with laboratory or early clinical evidence of a given deficiency is known one can form some idea of the number who probably have a deficiency too mild to give such evidence yet serious enough perhaps to cause some alterations in function or structure.

In the last few years a number of surveys of



nutrition of populations have been made using the objective methods described above, physical findings and laboratory tests. Such surveys give evidence of the kind and frequency of mild nutritional deficiency in various groups of the population and it is interesting and valuable to compare such evidence with the results of dietary surveys. Some of the results of such a survey, an assessment of the nutrition of a general population of some 1,200 persons in rural Tennessee, are shown in accompanying tables. As can be seen there is a great difference between the incidence of deficiency disease as established by various methods. (Tables 1-4.) Further-

TABLE 1

THE INCIDENCE OF PROTEIN DEFICIENCY IN A GENERAL  
POPULATION (APPROX. 1,200 SUBJECTS)

KIND OF EVIDENCE	INCIDENCE PER CENT
1. Dietary Intake Record	
Total Protein Intake $\leq$ 50 Gms. ....	45.5
Annual Protein Intake $<$ 20 Gms. ....	47.0
2. Physical Examination	
Edema Attributable to Protein Deficiency	0.9
3. Laboratory	
Hypoalbuminemia .....	9.0

TABLE 2

THE INCIDENCE OF VITAMIN A DEFICIENCY IN A GENERAL  
POPULATION (APPROX. 1,200 SUBJECTS)

KIND OF EVIDENCE	INCIDENCE PER CENT
1. Dietary Intake Record .....	48.5
2. Night Blindness (History) .....	5.5
3. Dermatoses .....	3.0
4. Lesions of the Sclerae .....	5.0
5. Adaptometer (Night Blindness) Tests .....	47.4
6. Blood Vitamin A Concentration .....	27.7

TABLE 3

THE INCIDENCE OF CALCIUM DEFICIENCY IN A GENERAL  
POPULATION (APPROX. 1,200 SUBJECTS)

KIND OF EVIDENCE	INCIDENCE PER CENT
1. Dietary Intake Record .....	74.0
2. Symptoms and Signs .....	00.4
3. Blood Calcium Concentration .....	1.8

TABLE 4

THE INCIDENCE OF VITAMIN C DEFICIENCY IN A GENERAL  
POPULATION (APPROX. 1,200 SUBJECTS)

KIND OF EVIDENCE	INCIDENCE PER CENT
1. Dietary Intake Record .....	61.0
2. Physical Examination Gingivitis .....	28.0
3. Blood Vitamin C Concentration .....	8.6

more, this difference in turn varies somewhat with the particular nutritive factor under consideration.

These rather wide differences are the result of several factors. Dietary studies, as indicated, above are predictive and except at extreme grades of deficient intake cannot be expected to determine accurately the presence or degree of deficiency disease. Also, as stated above, the signs and symptoms of slight or early deficiency are lacking in specificity. Many of such signs and symptoms have several causes and even rather careful examination cannot distinguish with certainty between them. Furthermore, the time necessary to produce, or permit the disappearance of, such signs makes close correlation between physical signs and dietary intake unlikely unless the latter observations are continued over impractically long periods.

The laboratory tests may offer more reliable evidence of the early deficiency lesions despite some differences of opinion regarding the significance and interpretations of some of the tests, but again correlation between the results of such tests are clearly shown in Table 5. There is shown, for example, a striking difference in the frequency of Vitamin A deficiency between white and colored children of certain age groups. At the same time, there is a similar difference between white males and females of a single age group (13-15) and a difference almost as great between white male and female adults. Colored children show a great decrease in frequency at ages 4-6 compared with 1-3 while white children show what appears to be a significant increase. In neither white nor colored groups does the average incidence for the entire group adequately express the different frequencies in the various sub-groups.

It is clear that if nutritional deficiency disease exists to the extent which appears from this and other data and if it contributes an important hazard to health and particularly in relation to the occurrence and the outcome and recovery of other disease it is important that all possible means be taken for its prevention and relief. Some of these procedures have been described this afternoon by other speakers.

In general, prevention is accomplished by an adequate, varied diet of usual foods. The nature of such a diet is well known and the difficulties with its use are based on economic factors, faulty food habits, idiosyncrasies and ignorance. There are, however, effects of storage, preservation, cooking, preparation and serving which may at times seriously interfere with the nutritional adequacy of an



otherwise adequate dietary. When these factors are controlled through education, improved social and economic status and technological advance, much of the backlog of low grade nutritional deficiency in a population will disappear.

There are, however, certain groups of people who are especially liable to deficiency disease. They need protective treatment. It is this group which is of particular interest and importance to the practicing physician because not only do the deficiencies pre-

of proper nutrients. This may involve parenteral feeding, tube feeding or intravenous feeding, and the use of food concentrates or even special preparation of vitamins, protein and minerals. Some of the more energetic measures have been described by Dr. Evans this afternoon.

When such protective treatment is not provided in advance of the occurrence of an actual deficiency and a deficiency occurs, curative treatment is, of course, indicated. For the grade of deficiency under

TABLE 5

VARIATIONS IN THE INCIDENCE OF A NUTRITION DEFICIENCY (VITAMIN A) IN AGE, SEX AND RACIAL GROUPS PER CENT DEFICIENT

		AGE AND SEX										TOTAL
		1-3*	4-6	7-9	10-12	13-15	13-15	16-20	16-20	21	21	
		M & F†	M & F	M & F	M & F	M	F	M	F	M	F	
White Subjects	-----	64.3	89.5	61.3	42.3	14.3	45.4	30.8	38.5	12.1	25.5	32.7
Colored Subjects	-----	66.7	16.7	8.3	8.3	0	12.5	0	16.7	12.5	17.2	14.6

\*Years.

†M—Males, F—Females.

sent special problems of their own, but as I have said above, and as we have learned today from the other speakers, they influence other diseases and complicate many situations with which the physician must deal. The group needing protective treatment is large and includes such persons as infants, especially the premature, pregnant and nursing women, those with disease interfering with the intake and utilization of food, notably those with gastrointestinal disease, those on special therapeutic diets, those with metabolic diseases leading to increased nutrition requirements, those suffering the results of trauma and operation and those requiring operation. It includes also some exposed to special occupational hazards, such as night workers and workers in special industries. Such a list, though not complete, will illustrate the wide range of conditions which are included in the group needing special protection and the importance of the groups to the practicing physician. In each case the particular needs should be determined and a particular effort made to protect against deficiency of that factor which it appears is likely to be deficient.

In many instances such protective treatment can be given to best advantage by the use of added amounts of extra natural food. For example, an extra supply of Vitamin C to an infant, or to a patient with tuberculosis, is better provided by a proper fresh fruit drink than by the synthetic vitamins. In some instances, however, this will not be enough and it will be necessary to use more drastic means to increase the intake of adequate amounts

discussion cure can usually be accomplished by proper kinds and added amounts of usual foods with particular attention to those specially indicated. Thus, protein can be supplied as meat, including viscera, eggs, milk and cheese and other protein rich foods and such a form of treatment is to be preferred. Sometimes, however, concentrates and pure preparations may be necessary, but even they should whenever possible be accomplished by a liberal varied diet.

#### SUMMARY

To summarize, we have attempted to show the basic and important relation of nutrition to health and disease and to clinical medicine particularly. Without intending to minimize the significance and importance of nutritional deficiency in the sense of specific deficiency disease we have sought to emphasize that nutrition and nutritional deficiency have a larger meaning, through their effect on other illnesses and diseases and the patient's response to and recovery from such illness and disease. The need for further knowledge of the relation between nutrition and health, especially under the impact of other disease, has been indicated. Data has been given on the amount and kind of nutritional deficiency which may exist in a general population and constitute a hazard and a complication to patients who are affected by other illness or disease, and methods for the diagnosis and detection of such deficiencies have been described. The practical application of measures for prevention and control have been presented and discussed.

CHAIRMAN HIGGINS: I am sure there are some who would like to ask some questions of Colonel Youmans and the other gentlemen who spoke in the symposium this afternoon. If you have some questions we shall be very glad to hear from you.

If there are no questions, I am sure I am speaking for the Medical Society of Virginia in telling Colonel Youmans that this symposium has been the high water mark of this convention and that his leadership in this subject is something which has brought out factors which we shall carry home with

us to great profit and that we shall look back to his short time with us with a great deal of satisfaction.

I should like to say to Colonel Youmans that I have talked to a great many members of the armed forces, including my own sons, and I have yet to find one who has not spoken with a great deal of esteem of the diets that have been supplied for them, whether in the camps, on ships, or elsewhere; and I should like to extend thanks to Colonel Youmans for his help in upholding our soldiers and keeping them in a high state of health.

### Those With Lung Ailment Should See Doctor Before Traveling by Plane.

Persons suffering from known diseases of the lungs should consult their physicians before traveling by plane, Lieutenant Commander Harold Vincent Holter, MC-V(S), U.S.N.R., and Lieutenant Orville Horwitz, MC-V(S), U.S.N.R., advise in *The Journal of the American Medical Association* for March 3.

They cite an instance where a young marine reported to the medical unit after his first airplane flight complaining of pains in his chest. Examination revealed about a 60 per cent collapse of the right lung. They believe that the cause of this condition was the change of atmospheric pressure produced by ascent to 8,000 feet in an airplane. They say their report on this case may assist other physicians in advising their patients in this respect.

It has lately been reported that patients with lung injuries may be transported by air, at low altitudes, without danger. However, in these cases, a tear in the lung is known to exist, and no further damage may be expected. "In contrast to these individuals," the two physicians say, "is the one reported in which the tear did not already exist, but is merely a potential weakness which may be converted into a full tear by means of decreased atmospheric pressure.

"Although no definite conclusion may be drawn from this particular case, it is our considered opinion that extreme caution should be exercised in advising patients who have had the known diseases of the pleura [the membrane that surrounds the lung and lines the chest] about airplane travel."

### New Books.

Recent additions to the Library of the Medical College of Virginia include the following, which are available to our readers under usual library rules:

Ashman & Hull—Essentials of electro-cardiography for the student and practitioner of medicine.

Bauer, W. W.—Contagious diseases.

Best, Harry—The deaf and deafness.

Boyd—Textbook of pathology.

Brenman—Hypnotherapy.

Carter—Fundamentals of electro-cardiographic interpretation.

Cole & Puestow—First aid, surgical and medical.

DeLee's Obstetrics for nurses.

Feinberg—Allergy in practice.

Flag, P. J.—The art of resuscitation.

Fruton, Jos. S. Ball, Bergmann—Energy relationship in enzyme reactions.

Hall, I. Simson—Diseases of the nose, throat and ear. 1944.

Harley, D.—Medico-legal blood group. Determination: Theory, Technique, practice.

Henry, R. J.—The mode of action of sulfonamides.

Landon—Anna and the King of Siam.

Orr, T. G.—Operations of general surgery.

Padgett—Skin grafting.

Rapaport, D.—Manual of diagnostic psychological testing. 1. Diagnostic testing of intelligence and concept formation.

Spurling—Practical neurological diagnosis.

Stern, B. J.—American medical practice in the perspectives of a century.

Weisenburg, T. & McBride, K.—Aphasia.

Year Book of Pediatrics—1944.

Year Book of Urology—1944.

## SUPPRESSIVE TREATMENT OF MALARIA DURING COMBAT OPERATIONS\*

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Much has appeared in the literature of recent years on the subject of malaria and particularly on military malaria control.<sup>1,2,3</sup> Several excellent textbooks cover the subject of malaria control quite adequately.<sup>4,5,6</sup> Were it possible to operate under ideal conditions in a theater of war, many of the fine outlines and suggestions offered by these authors could be carried out to the satisfaction of all concerned. Our limited experience with malaria in World War I, plus the inadequate training in tropical medicine afforded by most of the medical schools, left us ill-equipped to face such a formidable problem as World War II malarial problem has turned out to be. The fact that we are using the synthetic anti-malarial drugs as suppressive therapy under combat conditions for the first time has presented many problems, some of which were experienced in the Mediterranean theatre during 1943. That these same problems might not repeat themselves in the future prompts the authors to recount some of the pitfalls observed in carrying out an effective suppressive therapy program in North Africa 1942-1943.

PROPHYLACTIC TREATMENT OR SUPPRESSIVE  
THERAPY

It is acknowledged that in combat zones the first aim is to keep all personnel effective. This applies equally to support and supply troops as well as to those soldiers actually engaged in combat, and it is important that all troops in a combat area in which malaria is endemic observe rigid malaria discipline.

Russell<sup>1</sup> defines malaria discipline as "a state of orderly and effective conduct or action on the part of soldiers in respect to malaria control". One of the most important items in malaria control is sup-

pressive therapy and that might be given the name of "atabrine discipline".

If the soldier can appreciate the fact that his safety in combat depends in large measure on his physical well-being, he is more apt to be concerned with his suppressive therapy. Irregular doses of atabrine may permit atypical symptoms to "break-through" and render the soldier slightly "under par" in his reaction time and his ability to move quickly to avoid enemy fire.

It is not intended that suppressive therapy take the place of other measures directed at mosquito control. Protection against adult mosquitoes, and control of mosquito larvae as well as individual measures such as the use of sleeping nets, repellents and protective clothing are to be used to the fullest extent in conjunction with suppressive therapy.

Many soldiers fail to appreciate that atabrine in suppressive doses does not protect them from malaria, but simply postpones the attack. Thus, the soldier who is properly "educated" in malaria control understands that the individual measures used against malaria are adjuvants and are independent. No single individual measure will protect with certainty against malaria but all measures used in combination will, in a very large percentage of cases, be effective.

## DANGERS FROM INADEQUATE BLOOD LEVELS

Suppressive therapy can be potentially dangerous if taken irregularly. Inadequate blood levels of suppressive atabrine due either to irregular administration or ineffectual dosage may result in atypical symptomatology. In these atypical cases, clinical as well as laboratory diagnoses are difficult.

Many such atypical cases of malaria, many of whom had taken suppressive atabrine irregularly, were seen in North Africa and presented a real problem in diagnoses (see Case Histories 1, 2, 3, 4).

## ATYPICAL CASES

*Case 1. Malaria—Cerebral Type.* Six weeks be-

\*This paper has been approved by the Publication Department of the Surgeon General's Office.

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fore admission patient was hospitalized in Bizerte Evacuation Hospital for seven days with complaints of headaches, weakness, dizziness, "blackouts" but no fever or chill. Patient stated that he had taken one or two atabrine tablets a week. Blood smears for malaria were negative. Patient was transferred to a General Hospital where he remained for five days, and was then transferred by hospital ship to Oran, the trip requiring three days. Admitted to Tlemcen Station Hospital where he was studied for thirteen days in a Psychiatric Ward because of severe headaches. Discharged without diagnosis to Replacement Pool where he remained for four days, but was still complaining of severe headaches and weakness. Again admitted to Station Hospital where his RBC were found to be 2,000,000 and smears were positive for plasmodium falciparum. Recovery with quinine.

*Case 2. Malaria—Pulmonary Type.* This patient had been on two or three atabrine tablets per week for several weeks prior to his admission with generalized aches, headache, cough productive of thin sputum, chills and fever. X-rays showed evidence of patchy infiltration at one base with diagnosis of primary atypical pneumonia. Blood smear positive for plasmodium falciparum. RBC 3,650,000, WBC 6,200. Recovery with quinine.

*Case 3. Malaria—Gastro-Intestinal Type.* Patient had taken atabrine regularly for several weeks up until about three weeks before admission at which time he took only one or two pills a week. He was admitted with a two weeks' history of abdominal cramps and diarrhea, but no chills or fever. Stool culture negative; blood culture negative. Agglutinations for brucella, typhoid, paratyphoid negative. Blood smear positive for plasmodium falciparum. Recovery with quinine.

*Case 4. Malaria—Myalgic Type.* This patient gave a history of having taken atabrine irregularly for several weeks and was admitted with generalized muscular aches and pains, but no chills or fever. On examination, there was tenderness of all muscles and joints but no redness, heat or swelling. Active or passive joint motion was painful. Blood smear positive for plasmodium falciparum. Quick response to quinine.

It is absolutely essential that either a commissioned or a non-commissioned officer witness the actual swallowing of the atabrine tablets. Failure

to do so results in many malaria casualties. If not actually checked by a list each day some of the soldiers on guard duty, patrol duty, or other duty requiring their absence from the "chow line" will be missed in the suppressive program.

In mid-July, 1943, a group of thirty-seven hospitalized malaria patients were questioned in an effort to determine the cause for the "break-through" of clinical symptoms. From these patients it was learned that:

(1) Twenty-seven had had irregular dosage. Doses ranging from one atabrine tablet a week up to four or five atabrine tablets per week had been taken by soldiers in this group. Many reasons were given for the irregular dosage. Some of the soldiers stated that the pills were distributed by the non-commissioned or commissioned officer at irregular intervals. Others placed the pills in their pockets with the intention of taking them later, only to have the pills disintegrate from pressure or body moisture.

(2) Twelve had no supervision of the actual swallowing of the drug. In many instances neither a commissioned or non-commissioned officer witnessed the actual swallowing of the pill. In other cases the pills were handed to the soldiers under supervision of an officer but it was left to the soldiers' responsibility to actually ingest the pill.

(3) Thirteen failed to take their atabrine because they were away from the source of supply for a period of time while on patrol duty, and other details. No provision was made to provide some of the men who were out on patrol duty with a supply of atabrine to last them during this period of separation from the unit supply.

(4) Three stated that there was no supply of atabrine available for their entire company. Here there was a failure on the part of the person responsible for supply to anticipate the needs in order to take care of the entire unit during a forced march or, as in many cases during the Sicilian invasion, while the men were on ships during amphibious landings.

(5) Four professed an indifference to the program and stated they had thrown away the pills whenever opportunity presented itself. These soldiers stated that they preferred the disease to the gastro-intestinal upset which many of them suffered during the first few days of the suppressive program. Some stated: "When we were ducking lead we did not worry about atabrine."

(6) Only five had received adequate dosage under proper supervision.

#### SUMMARY

(1) The importance of a thorough, intensified educational program on the subject of malaria control and particularly on atabrine as an effective suppressive drug is stressed.

(2) Failures in suppressive atabrine programme are listed.

(3) Causes for clinical "break-through" are enumerated.

(4) Certain atypical case histories are presented.

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#### New Books.

The following are recent acquisitions to the library of the Medical College of Virginia and are available to our readers under usual library rules:

- Ackerknecht—*Malaria in the Upper Mississippi Valley 1760-1900*.
- Anson, ed.—*Advances in protein chemistry*. v. 1.
- Bailey—*Demonstrations of physical signs in clinical surgery*.
- Balfour—*The living soil*.
- Beveridge—*Full employment in a free society*.
- Collins—*The Aleutian Islands: Their people and natural history*.
- Cressey—*Asia's lands and peoples*.
- Druggists Circular—*The modern materia medica*. 3rd ed. rev. 1912.
- Emerson—*Health for the having: A handbook for physical fitness*.
- Fabricant—*The common cold*.
- Faulkner—*Plowman's folly*.
- Field—*Bernard Baruch, Park Bench statesman*.
- Files—*Medical Radiographic technic*.
- Fishbein, ed.—*Medical uses of soap*.
- Fisher—*Internal derangements of the knee-joint*.
- Francis—*Biographical sketches of distinguished living New York Physicians*. 1867.
- Gershenfeld—*Bacteriology and allied subjects*.
- Gesell—*The embryology of behavior*. 1945.
- Irwin—*Young Bess (a novel)*.

Jaffe—*Pathological conferences held at the Cook County Hospital*.

Janney—*Medical gynecology*.

Johnston—*World patriots*.

Leggett—*Ancient and medieval dyes*.

Lonn—*Salt as a factor in the Confederacy*.

Lorand—*Psychoanalysis today*.

McCracken—*Selected physics topics for home economics students*.

Massengill—*A sketch of medicine and pharmacy*.

Mather—*Enough and to spare*.

*Medical uses of soap: A symposium by ten writers*.

Perkins—*The Emperor's physician*.

Samuels—*Peripheral vascular diseases (Angiology)*.

Sharp, ed.—*A dynamic era of court psychiatry 1914-1944*.

Sigaud—*Belle Boyd, Confederate spy. (Novel.)*

Stern—*American medical practice in the perspectives of a century*.

Stokes—*Modern clinical syphilology*. 3rd ed.

Streeter—*The new healing*.

Sulzberger & Wolf—*Dermatologic therapy in general practice*.

Unger—*Bronchial asthma*.

Watson—*Fractures and joint injuries*. 3rd ed.

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*Yearbook of dermatology and syphilology 1944*.

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## PENICILLIN THERAPY IN OTITIS EXTERNA\*

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Otitis externa is most frequently brought on by direct trauma of the external ear canal, causing an inflammation of the hair follicles and sebaceous glands. The infection is more prone to occur during the bathing season, having greater frequency in persons using fresh water lakes and rivers rather than that of salt water. Following diving in water, the swimmer will, in many instances, endeavor to "un-stop" his ear by scratching or probing into it, thus abrading the epithelial surface or traumatizing the sebaceous glands and hair follicles. This, in turn, causes a direct portal for infection. The lack of local hygiene and utilization of blunt instruments in removing cerumen also causes infection but with less frequency.

The pathology<sup>1</sup> of the organism is usually staphylococcus pyogenes. In our patients who frequented fresh water lakes and tidal fresh water rivers, as in Tidewater Virginia, the infection began in 18 of the 62 cases seen by an otomycosis of the *Aspergillus* type and with a staphylococcus secondary organism. Patients utilizing salt water bathing had no fungus infection and the severity of their staphylococcal infection was not as great as those in this geographic area.

The symptoms of the cases varied in intensity, the earliest one being seen 48 hours after onset and the latest twenty-four days after exposure. There was a lateral bulging of the involved canal, the auricle being slightly forward and angulated outward at its lower portion. Patients had pain in masticating their food, and discomfort on swallowing was made worse if the tympanic membrane was disturbed by the infection. There was some redness and edema about the orifice of the external canal in most cases. Palpation over the pre- and inferior auricular lymph nodes elicited pain and in severe cases edema of the tissues over the mastoid bone was evident. Complete examination of the involved ear canal with an electric otoscope was impossible in 29 of the cases due to the edema of the canal. The external canal was swollen and from two to multiple diffuse furunculosis was present. In the

18 cases showing a mycotic infection, a dirty grayish coating of irregular thickness extended throughout a greater portion of the canal. On removal of the crusts there was a sweetish odor and the fungus showed up under potassium hydroxide, 1 per cent staining. The underlying surface was spotted with furuncles of varying sizes—from 1 mm. to 4 mm. in diameter. The temperature of these cases was from normal to 103.2 F.

A total of 62 cases of otitis externa was seen over a period from June, 1943, to August 4, 1944. Of these, 54 cases were treated with other medication than penicillin. Penicillin was used in nine cases and in two of these cases, that have happened previously, infection was of such severity as to necessitate hospitalization.

Until July 10, 1944, the usual method of treatment was gently cleaning the areas with sterile cotton applicator sufficient to remove the pus present, then use sulfathiazole<sup>2</sup> ointment, cotton tampon and continuous dry external heat. In the mycotic infections cresatin and 1 per cent thymol was used. The average duration of the 36 cases was 11 days for complete recovery. Eighteen cases were hospitalized. Sulfathiazole was given orally in those cases with doubtful results and the average hospitalization was four to five days.

Beginning July 10, 1944, Penicillin,<sup>3,4,5</sup> being the sodium salt in sterile distilled water, was used. A hundred thousand Oxford units were diluted in 20 c.c. and 1 c.c. of the solution added to 19 c.c. of water in a sterile beaker. The external orifice of the infected canal was cleaned with sterile cotton and a dry cotton wick placed in the ear. The patient's head was angulated over so that the infected canal was in an upright position. The solution was dropped from a sterile medicine dropper on the cotton wick until completely saturated. The penicillin solution was dropped in the ear every two hours, from four to eight drops. The penicillin sodium salt was 100,000 Oxford units diluted with 20 c.c. of sterile water to make a solution of 5,000 units per c.c. The usual dose of 20,000 units was given intramuscularly every three hours for the first 48

\*Presented at a Staff meeting of the Raiford Clinic, at Franklin, August 16, 1944.



hours. This solution was kept in refrigeration below 50 degrees F.

Six of the cases were hospitalized in order to give the drug, the other two being clinic patients. Two hospital employees were treated in essentially the same manner except that they continued their normal activities.

The average hospitalization was 2.2 days with a relief of symptoms in the first 12 to 18 hours. Of the six patients hospitalized, two had had previous infections, one in 1942 and one in 1943, being 6 and 8 days, respectively, in the hospital, and with a recovery time of eleven days.

A report in detail of five of the nine cases is included, the remaining four being similar to these rendered.

1. R. W. J., male, white, age 14. Furunculosis of 8 days' duration of left external ear canal; T. 102.6. Anterior lateral bulging of auricle. Pain on palpation of pre- and inferior auricular lymph nodes, discomfort in the mastoids but no evidence of infection. The canal was swollen to a slit like opening with numerous minute staphylococcic furuncles, and there was inability to masticate food on the left side. Penicillin solution was applied, as stated previously, 20,000 units of penicillin being given intramuscularly every three hours for 42 hours. A total of 280,000 units was given. Acetophenetidin 0.25 gm. was given every three hours p.r.n. for pain, with dry heat added. The infection subsided within 16 hours, and no new furuncles formed. The external canal had returned to its normal contour in three days; the patient's hospitalization lasted 2.5 days.

2. B. H. R., female, white, age 22. Had experienced two previous severe attacks of otitis externa, one in 1942 and one in 1943, the former of two weeks' duration and the latter requiring hospitalization of six days and home confinement of five days. Infection began first in the left ear, and was seen 48 hours after onset. Temperature was 99.8, and there was local aching with discomfort on swallowing or mastication. The canal was reddened, and the inferior and anterior walls were edematous with two staphylococcic abscesses present. The drum was injected but normal in contour. Penicillin therapy was instituted locally and intramuscularly, as above. A total of 100,000 units were given. The infection cleared in 18 hours, no local heat or other supportive measures being used. The right ear became infected

12 hours after the treatment of the left ear. This was treated in a similar manner and it returned to normal in 12 hours. The patient continued about her work. In comparison to her two previous experiences, it showed a marked contrast.

3. A. R. N., male, white, age 16. Mycotic infection of the left ear of 18 days' duration with the staphylococcus as a secondary invader. T. 100.2. When the mycotic crusts were removed from the left ear, a generalized staphylococcus infection was discovered beneath, forming four heads on the surface. The patient was put on penicillin therapy alone locally and a total of 160,000 units was given. The temperature subsided in 22 hours and there was complete recovery in 3.5 days. Hospitalization was for 2 days.

4. M. E. G., male, white, age 14. Developed staphylococcic left otitis externa 5 days prior to admission to hospital. T. 99.2. No abnormality of position of auricle; painful on pulling on pinna and tragus pressure. External canal was a vertical slit opening. There was furunculosis of the anterior and posterior walls. Penicillin wick was inserted and, in addition, dry external heat was applied directly to the ear. A total of 180,000 units was given intramuscularly. The temperature subsided after the first 24 hours and edema of the external canal abated at the end of 48 hours. No new formation of abscesses occurred. No symptoms were present at that time. The patient was discharged from the hospital and followed in the clinic for 5 days afterwards. At the second post-hospital day, the left ear canal was slightly injected.

5. A. H. C., male, white, age 31. Following swimming in a fresh water lake 9 days before, the patient developed an otitis externa in the left ear, for which, during the past four days, he had been given a phenol and glycerin mixture and sulfa drugs orally. T. 100.6. The pain, swelling and furunculosis nevertheless persisted. Two openings of the abscesses existed on the posterior wall. Local edema with pain radiating down left side of neck and in the cervical nodes were present. Generalized tenderness on manipulation of the auricle. The ear was debrided, and glycerin deposits were removed. Penicillin therapy was begun, and at the end of 48 hours the symptoms had disappeared. There was some redness of the canal with no new abscess formation. A total of 240,000 units of penicillin was

given. The patient was seen in the clinic on the fourth post-hospital day, having no symptoms and only evidence of swelling was at the old furunculosis orifices on the posterior canal wall.

#### CONCLUSION

In comparison to other methods used in the 1943 series and all types of local therapy with the sulfonamides, the introduction of penicillin in treatment of otitis externa proved to be a marked advancement:

1. The severity of the infection was decreased.
2. Duration of the pathology was reduced to half of its former hospitalization of 4.5 to 2.2 days.
3. The staphylococcus infection did not extend to other areas.
4. There was a complete absence of complications in this series.
5. Other than local soreness resulting from in-

tramuscular injections, no ill effects from the treatment were experienced.

6. Total duration of the illness with penicillin therapy was 4.5 days, while that of other methods of treatment was 11 days.

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#### Rural Medical Facilities.

A Committee of the Virginia Advisory Legislative Council is studying rural medical facilities with a view of ascertaining how the medical facilities and services available to the rural population can be improved. Members of the Committee are: Charles R. Fenwick, Chairman, Dr. J. M. Emmett, Clifton Forge; Dr. W. E. Garnett, Blacksburg; Senator M. M. Long, St. Paul; Dr. Henry B. Mulholland, Charlottesville; Dr. I. C. Riggins, Richmond; Dr. W. T. Sanger, Richmond; Dr. Philip Smith, Abingdon, and Dr. W. J. Sturgis, Nassawadox.

The Committee will hold a public hearing in Roanoke at the Hotel Roanoke on June 6 at 10 A. M. and in Luray on June 7 at 10 A. M. All persons interested are invited to attend and make known their views.

#### New Drug Holds Promise in Treatment of Typhoid Fever.

A promising new drug, related to penicillin in its germ-killing power, has been found useful in the treatment of typhoid—a disease for which heretofore

there has not been a treatment of any value, it is reported in *The Journal of the American Medical Association* for May 19.

Hobart A. Reimann, M.D., William F. Elias, Ph.D., and Alison H. Price, M.D., Philadelphia, studied effects of the drug during a local typhoid epidemic in December, 1944. About 60 cases with 8 deaths were reported during the epidemic, all of them arising from a typhoid carrier in a bakery. Because amounts of the drug were limited, only 5 patients were selected for treatment and study.

The drug, streptomycin, is a nontoxic substance which, like penicillin, has an inhibiting or destroying action upon bacterial growth. It acts, however, upon some disease producing bacilli on which penicillin has no effect, including *Eberthella typhosa*, the microbe which causes typhoid.

Of the 5 patients treated by hypodermic injection with streptomycin, recovery took place in 3 during treatment. The authors point out that different strains of this germ vary in their resistance to streptomycin. This may explain why not all of the patients responded to the new treatment.

## MYOSITIS IN CHRONIC RHEUMATISM AND CHRONIC GOUT

FRANK HOPKINS, M.D.,  
Hot Springs, Virginia.

The title of this article does not include rheumatoid arthritis, and its sole purpose is to call attention to the important role myositis plays in chronic rheumatism and chronic gout.

The two outstanding symptoms of these diseases are arthritis and myositis. Medical literature is prolific in its discussions of arthritis, but myositis, which always accompanies chronic rheumatism and chronic gout, and is the source of most of the pain, is scarcely mentioned. This is not wilful neglect but is due to the failure to recognize the muscular inflammation.

As a result of this failure, the passing over the myositis without recognition, there are thousands of sufferers going without adequate treatment. We cannot direct treatment toward the cause of these diseases, as the cause is unknown, but we can do much to remove the accompanying disability.

Hypothetically, the muscle is both a storehouse and a laboratory. Toxins of perverted metabolism and toxins of bacteria are carried to the muscle to be neutralized. Irritation is produced and this causes an exudate from the blood vessels; this process, repeated over and over, results in a permanent exudate, which gradually increases and with a tendency to organize.

As a result of this process, there is first a loss of resiliency in the tissues and then a gradually increasing induration. Thus, in chronic myositis, there is a massive exudate, producing pressure symptoms, and subject to recurrent attacks of acute inflammation with spasm and pain.

Fibrositis is an extension of the process and is of minor importance because of its limited involvement and its low vascularity, and, also, because of the lack of spastic qualities in the fibrous tissues.

With the vascularity of the muscle, exudates are readily formed; and, with its contractile power, pressure is applied and pain naturally follows.

Lumbar myositis is probably the worst offender; its manifestations show many vagaries. It often begins with mild attacks of lumbago which may increase in frequency and severity. In the advanced stage, there is a massive exudate, which, by pressure and muscular spasm, produces marked dis-

bility. It is at this stage of the disease that diagnoses of back strain, arthritis, sacro-iliac strain and sacro-iliac subluxation are made to explain the disability, and braces and belts are applied for immobilization; but undismayed, the disease continues to progress.

It is disastrous to immobilize muscular inflammation, as it increases blood stasis and therefore results in further exudates and increased pressure. During the very acute stage, the pain will splint the part sufficiently, and as the pain recedes, motion should be re-established as fast as possible. In other words, drainage of the tissues is essential for relief.

The same principle is involved in the treatment of contusions and sprains. The effect of a severe ankle sprain is like the breaking of a dam. Within a few hours, the tissues are flooded with exudates which result in severe pain. Any treatment, to be effective, must be directed to the drainage of the tissues and relief of pressure, and this means physiotherapy.

Lumbar myositis sometimes produces pain over the abdomen simulating an acute surgical condition. Occasionally, there is an almost constant dull ache over the abdomen.

A very important manifestation is sciatica. The majority of the cases of sciatica come from infiltration of the lumbar and gluteal muscles, but myositis anywhere along the course of the nerve may cause sciatica.

The shoulder muscles are frequently attacked, the deltoid being the favorite target; and if the condition is chronic, the fibrous tissues may be involved, and a deposit of calcium may accompany the inflammation. The shoulder involvement is often ascribed to neuritis, bursitis or arthritis. When the disease includes the pectoralis major, the discomfort may simulate cardiac pain.

The muscles of the forearm, especially the extensors, may be invaded and cause considerable disability. When the dorsal muscles are involved, the pain may not be localized and will radiate over the chest and along the costal margins.

The muscles of the leg as well as the plantar muscles are subject to the inflammation. The ad-



ductor muscles of the thigh are occasionally involved, and when the condition is chronic, the legs are drawn together and locomotion is very difficult.

Inflammation of the muscles and ligaments around the joints is common and frequently mistaken for arthritis. X-ray of the knees in patients past middle life occasionally show bony spurs, but in our experience they never cause trouble, although they are usually held responsible for the overlying inflammation.

Until we learn to recognize pathology in the mus-

cles in our physical examinations, we will continue to meet myositis with labels of arthritis, neuritis, and bursitis. The only way to diagnose and appreciate the vast changes taking place in the muscles in these diseases is by constant practice of palpation. All the muscles of every patient with one of these diseases should be carefully palpated.

With constant practice, we learn to distinguish between diseased and normal tissue. It is time consuming, but the rewards are large. Physiotherapy is the only effective treatment.

### Use New Method to Treat Migraine.

A new method for the treatment of migraine headaches by injections of a substance known as histamine is suggested from preliminary observations reported in *The Journal of the American Medical Association* for May 19.

Stuyvesant Butler, M.D., and William A. Thomas, M.D., of Chicago, who make the report, state that 34 patients with severe migraine were treated with histamine injected into a vein. Investigators had previously reported the administration of histamine by injection into a muscle without outstanding success. Dr. Butler and Dr. Thomas chose patients who could not conceivably have headaches from any other cause, such as sinusitis, eye-strain, neuralgia of the face or scalp, skull injury or brain tumors. Of the 34 patients, 24 became symptom free and 7 were improved.

The doctors caution, however, against the indiscriminate use of histamine. It is particularly dangerous if given to patients with peptic ulcer or high blood pressure.

One patient, a woman aged 32, suffered from very severe headaches, during which her speech was in-

distinct. Morphine injections often gave no relief. She was given three injections of histamine into a vein. Mild headache and heartburn was experienced during the first injection. She has had no return of headache for fourteen months.

### Public Health as an International Problem.

In China disease is much more prevalent than it is here. Cholera is reported every year; there were 100,000 cases in 1932, 65,000 cases in 1942, 17,000 cases in 1943. Bubonic plague had approximately 6,000 cases in 1942. It is estimated that there are about 6,000,000 cases of dysentery annually, 90 per cent bacillary, 10 per cent amebic. The estimated number of cases per annum of typhoid fever is 700,000; of smallpox, 500,000; of diphtheria, 360,000; of scarlet fever, 180,000. Epidemic meningitis is estimated at 100,000 cases per annum; malaria, 21,000,000 cases per annum; schistosomiasis, 10,000,000 cases per annum. Active tuberculosis is estimated at 36,000,000 cases, 8 per cent of the population. Under-nutrition is so widespread that no figures of any kind are available. Raymond B. Fosdick, L.L.D., *Amer. Jour. P. H.*, Nov. 1944.

## CASE REPORT OF MATERNAL DEATH

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MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

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This colored patient, aged 32, had a normal delivery of a full term living child 10 years ago. She first consulted her private physician for this present pregnancy in July, 1941, at which time she was  $3\frac{1}{2}$ -4 months pregnant.

In September, 1941, the patient had a few lower abdominal cramps "spotting" and was put to bed. She developed night sweats, dry cough, and loss of weight. Sputum examinations were negative for tuberculosis. X-ray of chest was negative. The cough and loss of weight continued and in October, fluoroscopic examination of the chest was done by a consultant and was reported as negative. She was given adequate diet and tonics.

The patient was admitted to the hospital on November 26, 1941, about  $7\frac{1}{2}$ -8 months pregnant and in premature labor. Examination showed rales throughout both lungs, temperature 102, pulse 140, respirations 48. The day after admission to the hospital the patient was given sulfathiazole, gr. 15, every three hours and morphine for cough. X-ray of chest was essentially negative except for marked elevation of the right diaphragm. There was no fluid in the chest and the costo-vertebral angles were clear. Laboratory studies revealed hemoglobin 80 per cent, red blood cell count 9,000, urine four plus albumin.

Two days after admission to the hospital the patient had a precipitate delivery of a premature, living child, weight 4 pounds 7 ounces. There were no lacerations or hemorrhage. No anesthesia used. Temperature after delivery 103 degrees. On the second postpartum day temperature 104 degrees and blood cultures negative. The third day postpartum, x-ray of chest revealed acute miliary tuberculosis

throughout both lungs. Because of inadequate facilities for isolation in the hospital the patient was discharged and was followed by her physician. She continued to grow worse, developed laryngitis and died on the ninth postpartum day. This death has been classed by the committee as a medical death although one member stated that pregnancy was at least partly to blame.

It is generally agreed that tuberculosis in the negro may be more flagrant than it is in the whites, particularly when they get a rather heavy infection. It is our opinion that miliary tuberculosis is more apt to develop in the colored race than in the white, and may likewise be more fatal. This patient must have had miliary tuberculosis developing from about the time of the onset of her symptoms, namely September, 1941, and it is possible that the pulmonary manifestations of the disease had not developed to the point that they could be seen on the film which was taken in October. The development of miliary tuberculosis in this woman may have been purely coincidental in relation to the pregnancy, but when it once developed and got well underway, it may through its toxicity have caused premature labor, and premature labor by emptying the uterus, etc., could have added to the acuteness of her tuberculosis. We feel sure that had the diagnosis of miliary tuberculosis been made when the symptoms developed, any therapeutic procedures instituted at that time would not have influenced the outcome and would have hastened the end.

We feel that the individualization of each case of tuberculosis associated with pregnancy has given better results and we no longer believe promiscuous interruption justified.

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\*Latest year available for U. S.



**WOMAN'S AUXILIARY**  
to the  
**MEDICAL SOCIETY OF VIRGINIA**

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Richmond.

### *Hygeia.*

Lest the women of Virginia forget to evaluate the importance of *Hygeia*, I should like to bring to your minds this valuable and authentic magazine.

It disseminates reliable information clearly and concisely in everyday terms that all may understand. The recognition of its worth, particularly by educators throughout the United States and the innumerable citations from its pages appearing regularly in digest publications and in other periodicals, indicate the manner in which *Hygeia* has become a source of information on health throughout the nation.

May I urge the AUXILIARY CHAIRMEN throughout the State to introduce *Hygeia* in the reading rooms of war industries, army camps, U.S.O. centers, as well as in the physicians' offices, where patients so often these days have to wait an indeterminate length of time.

MABEL L. DECORMIS,

(MRS. J. L.)

*Chairman, Hygeia Committee.*

### **Cancer Control.**

In this eventful and history making age, we have surely learned that we cannot afford to overlook dangers, even though they appear small and insignificant. This applies to world affairs, but one may also apply it to the world of medicine. Certainly the most important phase of medical effort today is cancer and cancer control.

One of the rules of nature is that everything begins small. This is certainly true of cancer—it starts small and doctors claim if taken in time it can be cured.

So many women, and I believe this applies to men too, put off going to a doctor because they are afraid their neighbors and friends might find out that they have that dreaded disease, cancer. They

are willing to put pride before common sense and take a chance on their very lives. Often when they have conquered pride and ask the doctor for help, they have put off until it is too late. The result is the doctor is rendered helpless to do anything but bear the agony of seeing his patient die before his very eyes.

Let us take warning and avoid this dreadful mistake. The Virginia Cancer Foundation has literature telling how to recognize the signs and signals of cancer.

One cannot plead ignorance on medical subjects today, for there are so many skilled and wonderful doctors everywhere. These men love their profession and put the welfare of their patients before anything else.

Mr. George Gallup, Director of the American Institute of Public Opinion, says, "Cancer societies throughout the country are especially concerned with educating the public to a better knowledge of cancer symptoms. In January of this year there were, according to cancer authorities, 600,000 cases of the disease under treatment, and doctors claim that a large percentage of all fatal cases could have been cured if brought to a doctor in time. On the average, 18 people die of cancer in the United States every hour." This is an astounding fact and one which is hard to believe.

Everyone should read "Does Cancer Run in Families" by Waldemar Kaempfert in the February 17 issue of the *Saturday Evening Post*. It is a thrilling three-page account of recent developments in the battle for cancer control. The last sentence of this article says: "Meanwhile it is worth remembering that cancer can be successfully dealt with by the surgeon and the radiologist if its presence is recognized in an early stage." This is a cheering message to everyone and I am sure we can all take courage. Then let us not be ashamed if we have cancer but realize that going to a doctor for a physical check-up in time will mean much to all of us. In this way we can assist in the great work which is so vital to us all, the Control of Cancer.

CAROLINE D. CLARKSON,

(MRS. WRIGHT)

*Chairman of Cancer Control.*

# VIRGINIA MEDICAL MONTHLY

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WYNDHAM B. BLANTON, M. D.,

*Editor Emeritus*

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### Dichloro-diphenyl-trichloroéthane

THE effectiveness of the third wonder drug of the war (sulfonamides, penicillin and DDT) was discovered because of a change in the monsoon season in East Africa. The Army had a satisfactory powder that would keep a man free from lice for about a week. One of the ingredients of this powder was pyrethrum. The early appearance of the monsoon in 1942 curtailed the supply of this substance from Kenya, the place from whence most of the pyrethrum came. The result was that a search for a substitute was begun.

In 1874 Othman Ziedler, a young student at Strasbourg, synthesized dichloro-diphenyl-trichloroéthane. This substance was first prepared commercially in Switzerland where it appeared on the market under the name *gesarol*. It was used to destroy certain agricultural pests. The Department of Agriculture called the military authorities' attention to this compound and extensive studies of its insecticidal and lethal properties were undertaken. These tests showed that it could be safely used. DDT, as it is called in Army parlance, kills insects either when ingested or when it merely comes in contact with them. It acts as a nervous system poison. For instance, mosquitoes after contact with an oily solution of DDT show no signs of being poisoned at first. After about 15 minutes they become agitated, take off abruptly and fly about in erratic drunken circles. In from 5 to 20 minutes they drop to the floor paralyzed, only to die several hours later. This reaction is so characteristic that it has been called "gesarol jitters", or DDT's.

The effectiveness of this new powder lasts much longer than any previously used. When a soldier's clothes are thoroughly dusted with DDT, he will remain free from lice a month. The repellent power of the clothing will last through several washings. The powder can be blown under the clothing with compressed air, so that the delousing can be done rapidly. In Naples some dusting stations deloused 5,000 persons a day and in all more than 1,250,000 persons were treated. The effect was little short of

miraculous. Not a single case of typhus has been reported among American troops in Italy, although there were fifty new cases a day in Naples when the invasion took place.

DDT has varied uses. Dissolved in oil it is much more effective as a larvacide than anything formerly used. It is effective even when used in infinitesimally small amounts. In quantities ordinarily used it is harmless to fish, water fowl and animals. We have seen it stated that dairy barns sprayed with DDT would remain free from flies for as long as a month. Whether this is one of the fantastic stories that were circulated after its adoption by the Army, we can not say. After the war, when it will be released for civilian use, it will undoubtedly find a great variety of uses.

#### Sir William Gowers, 1845-1915

THE *British Medical Journal* (March 31) takes the occasion of the 100th anniversary of the birth of Sir William Gowers to call attention to his place in Medicine. We are apt to think of him only as a neurologist, but he was really one of the founders of modern British Medicine. He was a great clinical observer and teacher. His published clinical lectures are models of perfect balance of observation and of judgment expressed in fluent, logical, and vital English. There still lives among neurologists a store of legends, handed down by his colleagues and his pupils, of his astonishing diagnostic skill and insight. "The lesson of this is that at the very foundation of sound medical practice lies a wide and deep familiarity with its material: the patient and his illness. Nothing can replace this, nor can all the ingenuity of the laboratory, nor the penetration of the skiagram, provide a substitute for direct observation at the bedside, the clinic, or the consulting room, and the unceasing contemplation of this direct experience. The complete physician, in fact, must be a connoisseur of clinical material, and not the least factor in the acquisition of this measure of skill and intuition is the careful and systematic recording of what has been observed." Gowers often referred to the benefit he had received from the two years in general practice with which he began his career. We are reminded that Osler constantly stressed the importance of taking notes and also the advantage to be gained from engaging in general practice. One of Osler's dictums was that no one should specialize until he had been in general practice five years.

#### Malarial Control on the Stilwell Road

VIRGINIANS are naturally interested in the road that General Lewis A. Pick built, for General Pick is a native Virginian and a graduate of V. P. I. The Press Censor of the India Burma Theater has just released the news of how the little known medical units in India and Burma have been winning a prolonged and exacting struggle against man's worst enemy, malaria. The India Burma Theater contains the world's worst malarial areas. The native population is infected almost 100 per cent. When the Stilwell Road was suggested, it was said that it could not be built, because of mosquitoes. The Indian and British troops in this same area in 1942 had suffered many times more casualties from malaria than from enemy action.

The Americans were inclined to heed the pessimistic predictions. Fortunately, there was an American doctor, Earl M. Rice, who for 20 years had operated his own hospital in Assam. He knew the country intimately, spoke the native language fluently, and had made a life time study of malaria. Tropical medicine was Rice's speciality. He was a member of the American Society of Tropical Medicine and a fellow of the Royal Society of Tropical Medicine. He was born in Hartford, Conn., in 1891, and grad-



uated in Medicine at the University of Oregon in 1915. He claims South Carolina as his legal residence. Dr. Rice was commissioned a lieutenant colonel in the Army Medical Corps and was assigned the task of controlling malaria along the proposed route. With two survey units and two control units he set to work. The number of survey and control units increased tremendously as the work progressed. In Bengal the *anopheles philippinensis* was his chief enemy. In Assam, he had to contend with the *anopheles minimus*, probably the most vicious malaria carrier known. In the Hukawng valley he found not only the *minimus* but also its dread runner-up, the *anopheles leucosphyrus*. The Hukawng valley has remained uninhabited because of these two species. In spite of them the Americans built an all-weather road and fought the Japs to boot.

Besides the conventional drainage, Paris green and oil sprays, aerosol bombs were used against the mosquitoes. Millions of yards of hessian cloth were used to mosquito-proof billets. Wrists and ankles were covered at night and repellents were used. When the troops went to the movies they were sprayed at the gates. Late in 1944, DDT became available and it was used in the native villages. It was even sprayed from planes so as to cover large areas. The transient who moved in and out of protected areas was treated with atabrine, which at least protected him from the malignant type of malaria.

Thus the road was built. In many ways it recalls the digging of the Panama Canal. Here, too, the mosquito held up the works, and an American doctor made it possible to do the actual work. Just as General Gorgas' name will always be linked with the Panama Canal, so Colonel Rice's name will be linked with the Stilwell road. For the past 17 months Colonel Rice has served as medical adviser to Lord Louis Mountbatten in Ceylon.

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### PRESIDENT'S MESSAGE

TO THE MEMBERS OF THE MEDICAL SOCIETY OF VIRGINIA:

I am quoting below a letter just received from Mr. Frank Perrin, Secretary, War Committee on Conventions, Washington, D. C. This, of course, is from the Office of Defense Transportation.

"Your application for a permit to hold a House of Delegates Meeting in Roanoke, Virginia, October 22-23, 1945, at Hotel Roanoke, has been reviewed by the Committee. It is the consensus of the Committee that this meeting should be deferred. Therefore, permit is denied. This action does not preclude your holding a meeting attended by not more than 50 persons from out of town, plus local attendance without numerical limitation."

As you will see, he has denied us the privilege of holding our meeting of the House of Delegates. This matter is now being discussed with the Council by correspondence and you will receive further notice in the next issue. At least a meeting of the Council will be held at the time specified.

Sincerely yours,

H. B. MULHOLLAND, *President.*

## Societies

### The Alexandria Medical Society,

At its May meeting, elected the following as officers for the ensuing year: President, Dr. L. Floyd Hobbs; vice-president, Dr. C. E. Arnette; and secretary-treasurer, Dr. James A. Gooch. All are of Alexandria.

### The Augusta County Medical Association

Held its regular quarterly meeting in Waynesboro on May 2, under the presidency of Dr. J. Hansford Thomas, Greenville. There was a good attendance and the following program was presented: Treatment of Fractures of Neck of Femur with Bone Pins by Drs. S. H. Garst and W. M. Phelps, Staunton; and Indications for Sulfonamides and Penicillin by Dr. H. B. Mulholland, University of Virginia.

The next meeting of this Association will be held in August. Dr. John H. Guss, Staunton, is secretary.

### Roanoke Academy of Medicine.

At the meeting of the Academy on May 7, the following officers were elected to take office in October: President, Dr. T. J. Hughes; vice-presidents, Drs. Charles Irvin and B. P. Seward; and secretary-treasurer, Dr. G. S. Bourne. Members of the Executive Committee are Drs. A. M. Groseclose, F. A. Farmer, F. E. Hamlin, W. L. Powell, and C. W. Dorsey. The Judiciary Committee is composed of Drs. J. W. Preston, J. O. Boyd, W. R. Whitman, H. B. Stone, Sr., and W. W. S. Butler.

Dr. Linwood D. Keyser and Dr. David S. Garner are retiring president and secretary-treasurer, respectively.

## News

### The 7th War Loan

Is a challenge to every American. The goal for individuals is the highest for any war loan to date, but this year there will be only two War Loans instead of three as in 1944.

The 7TH WAR LOAN lasts until June 30. Each individual is urged to buy all the bonds he or she can.

### The Virginia Society of Ophthalmology and Otolaryngology

Held its twenty-sixth annual meeting in Richmond, on April 28, under the presidency of Dr. James R. Gorman of Lynchburg. There were sixty-three in attendance for an excellent program which included the following:

President's Address—Dr. James R. Gorman, Lynchburg.

Management of Chronic Sinus Disease; A Critical Analysis of Modern Therapeutic Measures—Dr. O. E. Van Alyea (*Guest*), Chicago.

Further Report on Extraction of Cataract Through Vitreous (Motion Pictures)—Dr. G. M. Maxwell, Roanoke.

Hearing Aids: The Otologist's Problem—Dr. Joseph Krinsky (*Guest*), Charlottesville.

Post-Operative Infection in Eye Surgery—Dr. Edgar Childrey, Jr., Richmond.

A Preliminary Report on the Local Use of Penicillin in Otolaryngological Infections—Dr. Fletcher D. Woodward and Dr. Thomas Holt, Charlottesville.

Advances in the Treatment of External Diseases of the Eye—Dr. DuPont Guerry, III, Richmond.

Control of Haemorrhage After Tonsillectomy: Use of Thrombin—Dr. Francis H. McGovern, Danville.

Delayed Post-Tonsillectomy Haemorrhage—Dr. H. Grant Preston, Harrisonburg.

Ophthalmoscopic Classification of Hypertensive Diseases—Dr. Grady Clay (*Guest*), Atlanta, Georgia.

Following luncheon there was a business session, at which time it was decided to hold the next meeting in Roanoke, and the following were elected officers for the coming year: President, Dr. Meade Edmunds, Petersburg; vice-president, Dr. Thomas E. Hughes, Richmond; and secretary-treasurer, Dr. Francis H. McGovern, Danville.

### News from the University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on Monday, April 2, Lt. Col. Brian Blades of the Medical Corps, USA, spoke on the subject, "Recent Observations on the Treatment of Wounds of the Chest".

Dr. Fletcher D. Woodward, Professor of Otolaryngology, spoke at the Indiana University annual clinical post-graduate course in otolaryngology on April 15 in Indianapolis. His subject was "The Local Use of Penicillin". On April 21 he spoke on the subject "Sinusitis Associated With Allergic Rhinitis" at a meeting of the Michigan Allergy Society in Ann Arbor. On April 22, Dr. Woodward gave two lectures for the Annual Post-Graduate Course in Otolaryngology at the University of Michigan. At the meeting of the Virginia Society of Otolaryngology and Ophthalmology held in Richmond on April 28, he also spoke on the subject "The General Uses of Penicillin in Otolaryngology".

On April 6 Dr. Peyton Rouss of the Rockefeller Institute of Medical Research gave the second of the annual Sigma Xi Lectures. He spoke on the cancer problem.

Dr. Henry B. Mulholland, Professor of Medicine, spoke before the Augusta County Medical Society at the meeting in Waynesboro on May 2 on the subject "Indications for Penicillin and Sulfonamides".

At the meeting of the University of Virginia Medical Society on Monday, May 7, a symposium was held on the subject "Penicillin". This symposium was conducted by Doctors George M. Lawson, Henry B. Mulholland, Dudley C. Smith, Bruno Barelare, and Thomas B. Holt, members of the faculty and staff of the University of Virginia Hospital.

The University of Virginia chapter of Alpha Omega Alpha Honorary Medical Fraternity held a formal initiation for three new members on Friday, May 11. Dr. Franklin M. Hanger, Associate Professor of Medicine at Columbia University Medical School, College of Physicians and Surgeons, gave the address on the subject "Recent Advances in the Study of Hepatitis".

### Medical College of Virginia News.

Commencement exercises closing the 108th ses-

sion of the college will be held on Saturday, June 16, at The Mosque, with Honorable Clarence W. Meadows, Governor of West Virginia, as the speaker. One hundred seventy-six graduates are expected to receive diplomas. In the medical graduating class are nineteen members who completed their first two years at West Virginia University and their junior and senior years at the college under the new cooperative plan with West Virginia.

Mr. Walter L. Beale, lately returned from duty with the United States Navy, has been appointed assistant to the president, to fill the vacancy left by Mr. George W. Bakeman. Mr. Bakeman has been given a leave of absence of one year to be Director of American Relief for France with headquarters in Paris.

Dr. Raymond D. Kimbrough of Norfolk has been appointed associate professor of dermatology and syphilology and of preventive medicine. Doctor Kimbrough is now located on the eighth floor of the college hospital. Dr. J. Warrick Thomas has been appointed associate in medicine; Miss Susanne Hirt, assistant professor of applied anatomy in the Baruch Center of Physical Medicine; and Dr. Donald E. Stader, assistant professor of pathology.

Dr. Harry Bear, Dean of the school of dentistry, was awarded the honorary degree of doctor of science by Temple University at their graduating exercises on April 14.

### Virginia Society for Pathology and Laboratory Medicine.

The formal organization of this Society has been completed and the following officers elected: President, Dr. W. E. Bray, Charlottesville; vice-president, Dr. M. B. Beecroft, Newport News; secretary-treasurer, Dr. Thomas M. Peery, Alexandria; and councilors, Drs. J. H. Scherer, Richmond, and M. L. Dreyfuss, Clifton Forge. The Society numbers among its members most of those physicians practicing Pathology in the State of Virginia, and will welcome an application from any qualified Pathologist in the State who is not already a member. This Society is one of the specialty Societies affiliated with the Medical Society of Virginia.

### Dr. Glenn H. Baird

Resigned as Health Officer of Smyth-Washington-Bristol Health District, effective as of May 10, to accept a commission with the U.S. Naval Reserve.



### Doctors in Service and Promotions.

Two Virginia doctors who have recently entered the Service are:

Dr. Glenn H. Baird, Abingdon.

Dr. Alexander McCausland, Radford.

Promotions have recently been noted for the following Virginia doctors:

To *Commander*:

Dr. E. L. Alexander, Newport News.

To *Major*:

Dr. Henry C. Davis, Bluefield.

Dr. Thomas W. Murrell, Jr., Richmond.

Dr. Milton Salasky, Norfolk.

To *Captain*:

Dr. Lemuel E. Mayo, Portsmouth.

Colonel Joseph E. Cox of Waynesboro is serving as Commanding Officer of the 114th Station Hospital at a base in Italy—an important service and supply organization for the 5th Army and the ground forces of the U. S. Air Corps and Navy in Italy. This hospital has been a Neuropsychiatric Unit, the only one of its kind in the Italian War Theatre.

Major James R. Grinels of Richmond wrote recently, "I have been receiving the VIRGINIA MEDICAL MONTHLY from time to time, and have enjoyed it." He was assigned Chief Surgeon of the 112th Evacuation Hospital (sem). They were doing active surgery through France and into Germany.

Brigadier General Guy B. Denit, class of '16, Medical College of Virginia, who stayed in the regular army after serving in World War I, has made a name for himself in the malaria-control work in which he has been engaged in the Pacific.

### The Richmond Eye, Ear, Nose and Throat Society

Held its regular meeting in the Founders Room of the Medical College of Virginia on May 8, with the President, Dr. Luther C. Brawner, presiding. Dr. Walter J. Rein presented a motion picture about contact lenses and, following this, Dr. Rein demonstrated the materials used and explained the facilities for getting contact lenses in Richmond.

### Dr. James O. Fitzgerald,

Richmond, Guilford College graduate of the class of 1905, was elected president of the Richmond Chapter of the Alumni Society of the college at a dinner meeting on April 26.

### American College of Chest Physicians.

The Board of Examiners of the College announce that the next written examination for Fellowship will be held at Chicago, June 16. Candidates for Fellowship in the College who plan on taking the examination should contact the Executive Secretary of the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

### Virginia Cancer Foundation.

At the annual meeting held on April 28, Dr. I. A. Bigger, Richmond, was elected president and Dr. George Cooper, University of Virginia, director of the Foundation. Dr. Edwin P. Lehman, University, was elected to fill the new office of advisory director. Doctors serving on the board of trustees are: Drs. Arthur Gathright, Jr., Richmond; Julian L. Rawls, Norfolk; R. G. Beachley, Arlington; James R. Cash, Charlottesville; J. M. Emmett, Clifton Forge; R. W. Garnett, Danville; I. C. Riffin, Richmond; A. M. Showalter, Christiansburg; J. Shelton Horsley, Richmond; and Dr. Lehman.

### Dr. H. M. Richardson,

Midlothian, has been reappointed a member of the Trustee Electoral Board of Chesterfield County for a term of four years.

### Dr. Meade C. Edmunds,

Petersburg, has been elected a director of the local Lions Club for a term of two years.

### Home for Convalescent Patients.

A limited number of convalescent patients may be cared for in the private home of a graduate nurse. For details and rates, write or phone Mrs. D. C. Wills, Arrington, Virginia. (*Adv.*)

### For Sale.

Laboratory rabbits. We can handle large or small orders and have a constant supply. Contact us for your needs. Bonnie Brae Rabbitry, Route 12, Richmond, Virginia. Dial 5-2421. (*Adv.*)

### For Sale.

General Electric, Model R-38, 39, Diagnostic X-Ray Unit, combination Radiographic and Fluoroscopic, with standard Bucky diaphragm 200/260 v; 60 cy. Also holder for chest work. Used by private practitioner only one year previous to entering military service. All accessories available. Excellent condition, put away by G. E. agent. Cash sale only. Address Mrs. J. W. Sinclair, Warrenton, Virginia. Telephone Warrenton 168. (*Adv.*)

**For Sale—**

Hanovia Alpine ultra-violet sun lamp. Hot quartz burner. Cost \$500.00. No reasonable offer refused. Write Mrs. J. Frasia Jones, 928 West Franklin Street, Richmond 20, Va. (*Adv.*)

**For Sale—**

Town and country practice on main highway in Valley of Virginia. Home available if desired. Write Dr. E. W. Dodd, Buchanan, Va. (*Adv.*)

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## Obituaries

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**Dr. Benjamin Ashby Pope,**

Newsoms, prominent physician of Southampton County, died April 18, at sixty-nine years of age. He was a graduate of the Medical College of Virginia in 1898, and joined the Medical Society of Virginia that year. His County Society has expressed the following appreciation of him:

The Southampton County Medical Society deeply regrets the loss of their fellow member, Dr. Benjamin Ashby Pope (1875-1945). We have learned to regard him as an example of one of the most outstanding Christian personalities in our midst. His unselfish devotion and kindness to the people of his community shall be greatly missed. Dr. Pope reared a family of outstanding abilities and each of the children has demonstrated the example of living that was exemplified by him. During his forty-seven years of medical practice he served with devotion the sick and needy without thought of compensation. His entire life was devoted to the welfare of anyone he could help professionally or as an advisor. To his door problems of health and everyday living were brought. Throughout the years he gained the utmost respect from everyone that knew him and was revered by all because of his Christian character and example of following the principles that made him the beloved physician and citizen to each of us. In his passing we wish to extend our sympathy to each member of his family and the community and church that he so dearly loved.

We, the members of the Southampton County Medical Society, resolve that this resolution be sent to the family of Dr. Benjamin Ashby Pope and to the VIRGINIA MEDICAL MONTHLY.

MORGAN B. RAIFORD, *President,*  
*Southampton County Medical Society.*

**Major David B. Stuart.**

News has been received of the death of Major Stuart of Roanoke, which occurred in Belgium on April 14, following a coronary attack two days previously. He was a graduate of the Medical College of Virginia in 1924 and, after completing an

internship, he practiced for a time in Dublin before locating in Roanoke where he was engaged in general practice until he volunteered for duty in the armed forces in July 1942. He went overseas in October 1943. He had been a member of the Medical Society of Virginia for twenty years. His wife and three children survive him.

At the regular meeting of the Roanoke Academy of Medicine on May 7, 1945, the following resolutions were adopted:

It is with deep regret that the Roanoke Academy of Medicine has learned of the departure of Dr. David B. Stuart who passed away while serving with the armed forces in Belgium on April 14, 1945.

We wish to extend to his bereaved family our deepest sympathy and to express to them our sincere appreciation of Dr. Stuart as a fellow practitioner, as a friend, and as one who has made the supreme sacrifice in the service of his country.

To say that he was loved and esteemed by all who knew him expresses, as nearly as words can, his position in our community.

BE IT RESOLVED that a copy of these resolutions be sent to his family, to the local newspapers, and to the VIRGINIA MEDICAL MONTHLY.

J. H. BAILEY,  
 C. W. DORSEY,  
 DAVID S. GARNER,  
*Committee.*

**Dr. John William Smith,**

Branchville, died on February 25 of coronary disease. He was a native of North Carolina and seventy-three years of age. He graduated in medicine from the University of Maryland in 1906 and shortly thereafter located at Branchville where he had since made his home. Dr. Smith was a local surgeon for the Seaboard Air Line Railway, and had been a member of the Medical Society of Virginia for thirty-five years.

**Lt. (jg) Belton Allen Bennett, Jr., MC, USNR,**

Class of '38, University of Virginia Department of Medicine, died about December 3, 1944. He was a surgeon aboard the U.S.S. Cooper which was torpedoed and sunk in Ormoc Bay, off Western Leyte. After graduation, he served an internship and residency at St. Luke's Hospital, Bethlehem, Pa., and a residency at Doctors Hospital in Washington, D. C. He received the degree of master of science in surgery from the University of Pennsylvania in 1943, and entered the Navy in September of that year from Greer, S. C.



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\*Reiter, P. J., Experience with Benzedrine, Ugeskr. f. laeger, 99:459-460, 1937.



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# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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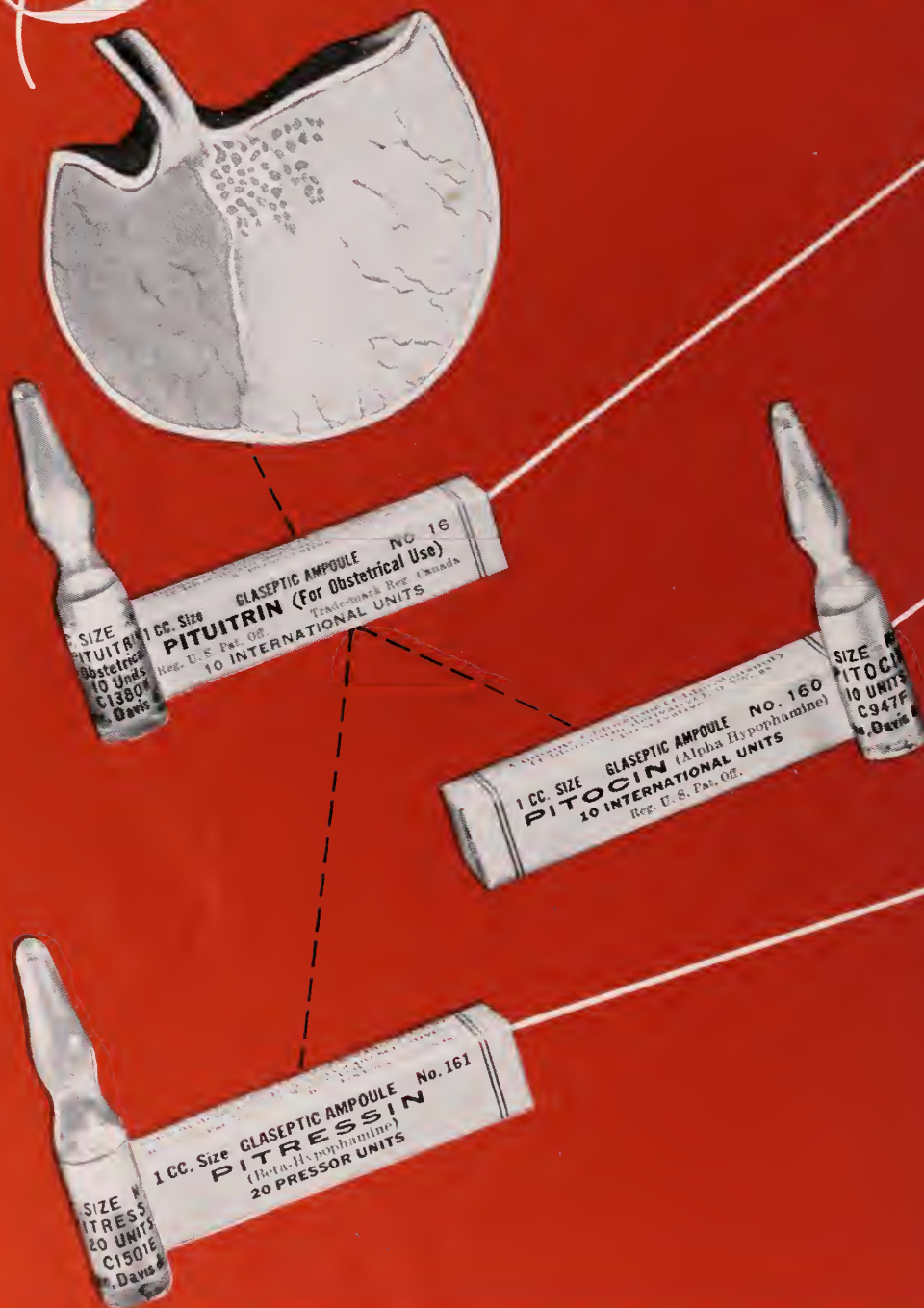


Medical College  
of Virginia  
Issue

July 1945

# Selective

## POST-PITUITARY ACTION





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Official Publication of the Medical Society of Virginia

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Vol. 72, No. 7.  
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\$2.00 A YEAR  
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## Guest Editorial

### Nursing Education and Service

IN the light of current trends it can be forecast, without great prophetic insight, that we shall see two major developments in the education of the nurse well launched in the next half decade: wide-spread establishment of courses for the education of hospital attendants, practical or vocational nurses, or whatever they are to be called, and the further development and extension of courses for the education of the professional nurse. There are national groups and committees actively considering both of these developments.

The designation "vocational" nurse is often used to differentiate definitely this individual from the "professional" nurse. However, hospitals may call them "hospital attendants", while the public and the nurses themselves may prefer to use the expression "practical" or "vocational" nurse. It is now believed that a minimum period of from nine to twelve months will be required for the preparation of practical nurses, largely on an apprenticeship basis; that they will be registered; that they will have limited functions, such as the care of the less acutely ill; and that they should work under the supervision of the professional nurse, to supplement her service. Their responsibilities, however, will be considerably greater than those of ward helpers or maids. During their preparation, they must be protected against exploitation. Many hospitals may plan to turn out only about as many as they can employ for their routine work.

Considerable experimentation remains to be done on the best methods of training practical nurses, and the range of nursing responsibilities which can be assigned to them. Certain preliminary steps of their education may fall during their senior year of high school, maybe an added year. Progression from the status of *practical* to *professional* nurse should be possible with minimal loss of time for those who wish thus to advance.

It is obvious that when it comes to the care of the sick in their homes it may not be easy to control the activities of the practical nurse by professional supervision, particularly if the practical nurse is well prepared by experience for general duty nursing rather than specialized nursing. Doubtless, different hospitals will prepare them in different ways, depending upon the organization and the size of the differentiated services of the institutions concerned; and registration also will vary with different states.

In the future, many of the duties of the present day professional nurse may be delegated to the practical nurse, leaving for the professional nurse clinical teaching, super-

visory and nurse headship functions in specialized fields, public health nursing, educational and administrative activities, and, of course, care of the more acutely ill. It may not be generally realized that in the past twenty or twenty-five years the graduate nurse has had turned over to her by the physician a score of new technics and procedures to be carried out on her own initiative when ordered, and, during the same time, has been called upon to assist the physician in another score of new and complicated procedures which modern medicine has developed. If this trend continues apace, it may turn out that the professional nurse of tomorrow will be looked upon as a sort of clinical technician or assistant, calling for still longer preparation. In any event, her education must continue to emphasize care of the patient, and she must never get away from that.

In recent months many of our older nurses, though sorely needed, have hesitated to return to nursing, because "these nurses have recognized a change in the types and variety of procedures which have passed into the hands of the nurse during the past fifteen or twenty years." Student nurses sometimes come under criticism by attending physicians, when it is discovered that they are not skilled in the procedures and technics requested of them. To meet this situation as well as possible, such nurses are often introduced to these procedures and technics too early in their course which is bad educational practice. After their preclinical period, students should be introduced to their responsibilities with patients by degrees, in proportion as they are qualified by experience and background to carry them. In meeting the demands for service in many hospitals, this is not always possible, especially in emergencies like the present war.

The education of the professional nurse of tomorrow is likely to include two programs: (1) a basic course of about four years, with a liberal admixture of general educational subjects as is found in courses for engineers and pharmacists, which will lead to the bachelor's degree and prepare for general staff duty appointments in the various divisions of nursing service, and for general public health work; (2) an advanced program of a year or more, providing for specialization as clinical and other teachers of nursing, supervisory and nurse headships, educational administration, administration of nursing service, and top positions in public health work. This program may lead to advanced degrees equivalent to the master's or doctor's degree. Those who complete it should be expected to have had ample experience before receiving calls to the better positions, for which specialization has prepared.

It is already obvious that, ultimately, there will be far fewer schools for the education of the professional nurse, and far more schools for the preparation of the practical nurse, than exist today. Professional schools will become the responsibility of the larger medical centers.

Physicians, generally speaking, are not interested in education itself; nor is the public in general. Both groups are more concerned about the *product*, rather than the *process*, of education. For a generation now the nurses themselves, like other professional groups, have had to battle for the educational ideals which they have cherished. All education is likely to have serious financial handicaps. This has been particularly true of nurse education, because the time was, when it was believed that the nurse should pay for her education by her service to the sick. No one knows too well even yet whether she is paying too dearly, or too little, for this. However, when this problem and those related to it are viewed in broad perspective, one is compelled to conclude that all forms of education ultimately will be financed in about the same way, from

subsidies provided by endowment, appropriations from tax funds, and by fees. Then, general nursing service will be a direct charge against medical care, paid for, no doubt, in a variety of ways, by subsidies of one kind or another, by patients themselves, and, perhaps preferably, by insurance coverage, quite in the manner physicians' fees are beginning to be covered.

Nurse education today is going through rather abrupt transition, much the same as came to medical education a generation ago, paralleled later by dental education, pharmacy education, and other types. During all such transitions, critics are numerous and vocal. Many of us remember the rather bitter protest against lengthening the medical course and, even more particularly, against lengthening the prerequisite preparation for the study of medicine. As recent as fifteen or twenty years ago, pointed comments on this subject were still appearing in the literature, and even more in medical or lay gatherings, or both. The development of the new trends in nurse education is a typical social movement like those which preceded in kindred fields. They are challenging and bespeak our interest and, mayhap, our cordial aid in assisting them, to the advantage of the profession and of the public. Here, too, is an opportunity for experimental education.

W. T. SANGER, *President,*  
*Medical College of Virginia.*



Governor Clarence W. Meadows of West Virginia (second from left), 1945 Commencement Speaker at the Medical College of Virginia, is pictured above with President Frederick W. Boatwright of the University of Richmond (fourth from left), Honorary Degree Recipient this year, Governor Darden (third from left), and Doctor Sanger.



## PNEUMOCOCCAL MENINGITIS

HARRY WALKER, M.D.,  
and  
G. WATSON JAMES, III, M.D.,  
Department of Medicine,  
Medical College of Virginia,  
Richmond.

With the development of new chemotherapeutic agents there has been a slight decline in the morbidity figures in pneumococcic meningitis.<sup>1,2,3</sup> It is the purpose of this communication to show that the death rate can be further reduced if adequate surgical drainage of the primary focus or foci, if accessible, is carried out early in conjunction with these newer therapeutic agents.

The material presented includes all cases of pneu-

All the included patients had bacterial confirmation of the diagnosis.

The method of analysis was to divide all the cases into three groups: pneumococcic meningitis in which no sinus foci could be demonstrated, presumably metastatic from blood stream invasion; secondly, those patients in which sinus foci were demonstrated either by roentgen examination or clinically, but who did not have surgical drainage; and lastly, those

TABLE I.

No.	STATISTICAL DATA	SPINAL FLUID		BLOOD STREAM	FOCUS OF INFECTION	TREATMENT	DAYS OF HOSPITALIZATION	RESULT
		COUNT	TYPE					
1.	White female age 66	670	VI	No cult.	Multiple abscesses lungs, thyroid	Sulfadiazine and serum	3 days	Died.
2.	Negro female age 59	7,800	XVII	No cult.	Endocarditis	Sulfapyridine	2 days	Died.
3.	Negro male age 45	3,400	XXV	Positive pneumo type XXV	Endocarditis	Sulfapyridine	31 days	Died.
4.	Negro male age 20	10,000	IV	No cult.	Lung, type IV	Sulfanilamide and serum	1 day	Died.
5.	White male age 78	800	XII	Negative	Not known lung?	Sulfadiazine	4 days	Died.
6.	Negro male age 19	10,000	XII	Negative	Not known	Sulfadiazine and repeated lumbar punctures	31 days	Alive, but died 6 mo. later with convulsions. Cause—?
7.	Negro male age 55	—	III	Negative	Not known	Sulfadiazine	7 days	Died.
8.	Negro male age 46	9,000	IV	Positive type IV	Lung	Sulfapyridine	3 days	Died.

mococci meningitis admitted to the medical service at the Medical College of Virginia Hospital and St. Philip Hospital from January 1, 1939, to June 1, 1945. There were a total of 28 cases, 8 white patients and 20 Negro patients. Sufficient clinical, laboratory, and roentgenological examinations were done on each case to make it admissible for study.

patients with sinus foci which were drained surgically either during the first or a subsequent admission.

## CASE REPORTS: GROUP 1.

There were eight patients in this classification. Six were Negroes and two were white patients. Their ages ranged from 19 to 78 years. Table No. 1 shows

comparative data. The one patient in this group who recovered died six months after discharge in a convulsion, the nature of which was not disclosed. All of them received a sulfonamide drug derivative, usually sulfapyridine or sulfadiazine. In addition pneumococcic serum was used in the treatment of one patient without any apparent benefit. Blood cultures were not obtained on all, but two cases had positive blood cultures with the same type organism found in the spinal fluid. In general the course of the disease was rapidly downhill, but several of this group survived for two or three weeks. Two case histories are presented which we believe are typical.

*Case No. 1.* B. M., No. 23514, a 45-year old Negro man, was brought to St. Philip Hospital on December 23, 1939.

Three weeks prior to admission he had developed a cold with a cough productive of "white phlegm" and fever. One week before admission he had a definite chill. Anorexia and weight loss were constant during the first three weeks, but he had had no nausea or vomiting. Twenty-four hours before admission he refused food and fluids and soon became irrational and then unconscious. There had been one previous admission to this hospital in 1934 for a stab wound of the chest which had healed satisfactorily.

Physical examination disclosed a poorly developed, undernourished, dehydrated, irrational Negro man. The skin was hot and dry. His temperature was 104, pulse 100, respiration 40, and blood pressure 180/105. The pupils were constricted and did not react to light. His mouth was dirty and dry with a foul odor. The ears were negative. The trachea was in the midline and there was definite, but not marked nuchal rigidity. Chest was symmetrical and expansions equal. There was dullness to percussion over the left lower lobe with diminished breath sounds and a few crackling rales in both lung bases. A friction rub was heard anteriorly over the right chest wall at the level of the fourth rib. The point of maximum impulse was diffuse about 2 cm. outside the mid-clavicular line in the fifth left interspace. The heart sounds were strong and regular and no murmurs were heard. The remainder of the physical examination was not remarkable. One observer thought that a positive Babinski was present on the left foot.

Urine was amber and acid with a specific gravity of 1.030. Other than a two plus albumin and much

amorphous material in the sediment it was not noteworthy. The blood picture disclosed a hemoglobin of 52 per cent (Sahli) with a red cell count of 2,400,000. There were 45,300 white blood cells with 92 per cent leucocytes and 8 per cent lymphocytes. A lumbar puncture revealed grossly purulent fluid with a white cell count of 3,400 with 98 per cent polymorphonuclear cells. Organisms were present on direct smear and were cultured as pneumococcus type XXV. Blood culture revealed the same organism. Roentgenogram of the chest was interpreted as showing slight deviation of the heart and mediastinum toward the left with a density throughout the left lung less marked at the costophrenic angle. There was also a small density in the right lower lung.

He was given sulfapyridine by stomach tube and fluids intravenously. Two days later he was rational, afebrile, and considerably improved. Blood sulfapyridine level was 7.5 mgm. per cent, and in the spinal fluid the level was 4.5 mgm. per cent. Marked clinical improvement continued and on the sixth day after admission his spinal fluid was clear. He had been given one blood transfusion.

On the 13th hospital day he began to run a septic febrile course. A chest roentgenogram two days previously had showed some improvement, but the lungs were still not clear. On the 16th day he was unresponsive and had signs of meningitis. A lumbar puncture revealed clear fluid and nothing grew on culture. The sulfapyridine blood level was 19.8 mgm. per cent. On the 20th day he developed gangrene of the left leg following sudden obstruction of the femoral artery. This complication was thought to be due to embolism from an acute endocarditis. Culture from the leg revealed type XXV pneumococcus. He was treated with heparin and then amputation was performed. He failed rapidly in spite of transfusions and other supportive therapy. Death occurred on the 31st hospital day.

This man, after six days of intensive treatment, gave some clinical indications that he might survive. Subsequent events proved this impression an error. The fact that a suppurative endocarditis probably developed or progressed while he was still receiving a bacteriostatic drug in sufficient quantity to maintain an adequate blood level indicates that the initial response was due to a temporary sterilization of the blood stream, and furthermore it shows that as long as an active focus of infection remains (in

this case the lung) the prognosis is bad because of the possibility of reinfecting the blood stream. The subsequent course with embolism to the left leg supports this point of view. No roentgenological study was made of his sinuses as clinically there was no indication of a suppurative sinusitis.

*Case No. 2.* P. D., No. 52085, a 46-year old married Negro grocery man, was brought to St. Philip Hospital irrational and unconscious on January 13, 1942.

Approximately three weeks prior to admission this man had developed pneumonia and improved under treatment. He returned to work, but very shortly his condition became worse and he rapidly became unconscious and delirious.

On physical examination the patient was disoriented but overactive. His skin was hot and dehydrated. His temperature was 105, pulse 130, respiration 30, and blood pressure 130/70. The pupils were unequal with the right larger than the left. His tongue was coated and protruded in the midline. The neck was stiff. The chest was symmetrical. There was a draining lymph node in the left axilla. Over the right middle lobe and right lower lobe there were bronchovesicular breath sounds and a few fine and medium moist rales. The heart was not enlarged. The rate was rapid and regular. There were no murmurs. The abdomen was not remarkable except that the edge of the liver was felt at the right costal margin. The extremities were negative. There was a questionable bilateral Babinski. The Brudzinski and Kernig signs were strongly positive.

Lumbar puncture revealed a cloudy fluid under slight increase in pressure. Type IV pneumococci were demonstrated by direct smear and typing reactions. There were 9,000 white cells with 100 per cent polymorphonuclear leucocytes present in the spinal fluid. The urine was negative except for a one plus albumin. The blood picture showed an erythrocyte count of 3,310,000 with 70 per cent hemoglobin, and there were 24,000 white cells with 89 per cent polymorphonuclear ones, 9 per cent lymphocytes, and 2 per cent monocytes. The blood culture was positive for type IV pneumococci. A roentgenogram of the chest was interpreted as showing general enlargement of the thoracic aorta with only slight enlargement of the heart, and with an increase in the bronchovascular markings suggesting pulmonary congestion with no definite pneumonic or tuberculous process.

He was given intravenous sulfadiazine followed by other intravenous fluids and transfusions. Two days later he showed some clinical improvement, but remained stuporous with a stiff neck. The temperature fell to normal. Examination of the sinuses was negative clinically. The temperature remained normal for three days but rose rapidly on the fifth hospital day and he expired. Permission for autopsy was refused.

The history and clinical course in this case are in some respects very similar to the first case reported. There was temporary improvement but death followed very shortly. No clinical signs of an endocarditis were present. The blood stream infection and the meningitis were both due to the same organism. The other cases in this group are more or less similar so far as the clinical course is concerned.

#### CASE REPORTS: GROUP 2.

This second group includes those cases of pneumococcal meningitis in which there is definite evidence, either clinically or roentgenologically of sinus involvement. In none of these cases was any surgical procedure performed. The age range of the fifteen patients was from 17 to 59 years. Table No. 2 shows the summary data. The mortality was 66 per cent. As before, they were treated with one of the derivatives of the sulfonamide compounds, chiefly sulfapyridine or sulfadiazine, and one received penicillin.

*Case No. 3.* A. C., a 17-year old Negro girl, was sent to St. Philip Hospital on December 25, 1940, with the diagnosis of meningitis.

She had been ill for about two weeks with an upper respiratory infection and a draining ear following an acute otitis media. Twenty-four hours before admission she had become suddenly acutely ill with rapidly developing delirium and finally became unresponsive.

Physical examination revealed an acutely ill, dehydrated young Negro girl who was unconscious. Her temperature was 104, pulse 140, respiration 25, and blood pressure 150/100. The pupils were equal and reacted to light. The retinal veins were engorged but there was no papilledema. There was perforated left ear drum with purulent drainage. Nuchal rigidity was present. Over the upper right lung there was thought to be impairment to percussion and a few medium moist rales were heard, otherwise the lungs were clear. Examination of the



heart was negative, and the remainder of the physical examination did not disclose any significant findings.

A lumbar puncture was performed and purulent

fluid was found under increased pressure. Direct smear showed numerous gram-positive cocci which were cultured as type XIX. The cell count was 10,360. There was a hemoglobin of 70 per cent

TABLE II.

No.	STATISTICAL DATA	SPINAL FLUID		BLOOD STREAM	FOCUS OF INFECTION	TREATMENT	DAYS IN HOSPITAL	RESULT
		CELL COUNT	TYPE					
1.	Negro male age 19	7,200	III	Negative	Rt. mastoid	Sulfapyridine	1 day	Died.
2.	Negro male age 17	220	XV	Negative	Pansinusitis	Sulfanilamide	41 days	Died.
3.	White male age 59	1,500	XXIII	No. cult.	Rt. frontal bone fracture	Sulfapyridine	3 days	Died.
4.	Negro female age 24	2,640	XII	Negative	Left antrum	Sulfapyridine	27 days	Alive.
5.	Negro female age 36	350	III	Type III pneumo	Left otitis media	Sulfanilamide	1 day	Died.†
6.	Negro female age 19	10,350	XIX	Negative	Left otitis media	Sulfapyridine	1 day	Died.
7.	White male age 37	1,190	III	No. cult.	Left otitis media	Sulfapyridine	1 day	Died.
8.	Negro male age 28	22,650	XI	Negative	Frontal sinus following fracture	Sulfapyridine	7 days	Died.
9.	Negro male age 51	8,850	III	Type III pneumo	Mastoiditis	Sulfanilamide	3 days	Died.
10.	Negro male age 17	1,850	I	Negative	Otitis media	Sulfapyridine	31 days	Alive.
11.	Negro male age 17	2,500	XVII	Negative	Rt. frontal sinusitis	Sulfadiazine	14 days	Alive.
12.	White male age 35	272	III	No. cult.	Osteitis of petrous bone	Sulfadiazine	1 day	Died.
13.	Negro female age 16	1,210	XIX	Negative	Frontal sinusitis	Sulfadiazine	32 days	Alive.
14.	Negro male age 42				Frontal sinusitis	Sulfadiazine Pencillin	4 days	Died.
15.	*Negro female age 32	8,000	XVII	Negative		Sulfapyridine	15 days	Alive.
	2nd "		Neg.	Negative	Rt. frontal sinus cloudy	Sulfapyridine	30 days	Alive.
	3rd "	45,000	XXVIII	Negative	Frontals and sphenoids cloudy on X-ray	Sulfapyridine	15 days	Alive.
	4th "	6,400	Neg.	Negative	Pneumonia (?) Frontal sinuses cloudy	Sulfapyridine	15 days	Alive.

\*Case of recurrent pneumococcic meningitis which has previously been reported by Craddock and Bowers.

†This patient died shortly after a cisterna puncture had been attempted since fluid could not be obtained on lumbar puncture. At necropsy there were found several puncture wounds in the dura over the cisterna, and it is possible that this may have contributed to her death.

and a polymorphonuclear leucocytosis of 25,000.

She was treated with intravenous sodium sulfa-pyridine followed by other supportive therapy, but remained profoundly unconscious and died nine hours after admission.

Autopsy was performed twelve hours after death. The pertinent findings were marked pulmonary congestion and edema, and congestion of the liver. Throughout the pancreas there were many thrombi filling the small vessels. The pituitary gland showed several areas of focal necrosis. Over the surface of the brain there was a diffuse purulent meningitis from which was cultured pneumococcus type XIX. No connection between the left ear and the cranial vault was observed, and the scalp and periosteum appeared normal.

This is a case of rapid extension of the infection to the meninges. The clinical evidence pointed to the left ear as the original source of the infection.

*Case No. 4.* S. Z., No. A-20851, a 35-year old married engineer, was sent to the Medical College of Virginia Hospital with the diagnosis of meningitis.

The patient had had an upper respiratory infection for three weeks. Three days before admission he returned home from work complaining of headache and pain in his right ear. Nausea and vomiting developed the next day and he became irrational and delirious.

On admission he was unconscious and needed restraint for his delirium. His temperature was 103, pulse 136, respiration 40, and blood pressure 130/80. There was a gash about one inch long over the right eye. The right pupil was smaller than the left and both were irregular and reacted sluggishly to light. The ears were described as normal. The neck was stiff. His chest was clear but there was a Biot type of respiration. The heart was not enlarged and the sounds were of good quality. There was a soft apical systolic murmur. Other than for several abrasions over the body the remainder of the examination was negative.

Laboratory work disclosed a red cell count of 6,000,000 with a hemoglobin of 110 per cent. There were 20,000 white cells with 91 per cent polymorphonuclears, 8 per cent lymphocytes and 1 per cent monocytes. Lumbar puncture revealed a purulent fluid with 272 white cells comprising 83 per cent polymorphonuclear ones and 17 per cent lymphocytes. There were many gram-positive cocci on direct smear which were cultured a pneumococcus type III.

He received 10.0 grams of sodium sulfadiazine intravenously, but expired 16 hours after admission.

Autopsy was performed eight hours after death. The significant findings were confined to the skull. Over the right petrous bone yellow purulent fluid was present. In the right middle ear there was a similar type fluid. The left ear was normal. Over the surface of the brain there was a purulent meningitis particularly in the subarachnoid space and around the frontal and temporal lobes. The arteries appeared normal. Microscopically the meninges were diffusely infiltrated with polymorphonuclear leucocytes and bacteria. Sections of the bone from the petrous ridge showed dense infiltration with phagocytic cells.

In this case the cause of the meningitis was not readily appreciated and no surgery was performed. His hospital course was rapidly downhill. The focus of infection was conclusively shown to be right ear and petrous bone infection.

Of the fifteen cases in this classification five were discharged as cured. In examining the hospital course of this group we found it was prolonged in spite of adequate doses of the bacteriostatic agents. One of these patients had a recurrent meningitis with four hospital admissions, and in three of them the organism responsible was of a different type each time. Recently several cases of recurrent meningitis have been reported in the literature.<sup>4,5,6,7</sup> Furthermore, one of the patients in this group had an infected antrum irrigated on several occasions and this probably contributed to his recovery. Apparently as long as there is a focus of infection it will continue to send out bacteria into the blood stream and thus to the spinal fluid. This probably accounts for the long febrile course in many cases. There is no follow-up study on the five patients in this group who survived.

#### CASE REPORTS: GROUP 3.

This group consists of those patients with pneumococcic meningitis who during the first or a subsequent hospital admission had surgical drainage of an infected nasal or auditory sinus. There were five such cases with a mortality of 20 per cent. Three were white patients and two were Negro patients. One of the cases to be reported in detail had recurrent pneumococcic meningitis with four hospital admissions before he underwent operation for the involved sinus. Table No. 3 shows the data.

*Case No. 5.* V. W., No. A-30797, a 32-year old single white woman, was admitted to the neurosurgical service and later transferred to the medical service with the chief complaint of earache, nausea and vomiting.

Two weeks before admission this patient had a head cold and was treated by her family physician with improvement. She returned to work. Five days before admission she complained of right earache and right frontal headache. Two days later she was seen by her family doctor in his office who found a sore throat and advised that she stay in bed. Two days before hospitalization she became restless, irrational and vomited everything taken by mouth. She was sent to a nearby hospital where a lumbar puncture was performed and a diagnosis of meningitis

The neck was very stiff. Examination of the heart, lungs and abdomen was negative. Further neurological examination revealed no sensory disturbance, and movements of all the extremities were present, but it was thought that she moved her right extremities more than the left. All the tendon reflexes were present, and no pathological reflexes were elicited.

Examination of the blood showed a red cell count of 3,040,000 with a hemoglobin of 58 per cent. There were 13,000 white cells with 92 per cent polymorphonuclears and 8 per cent lymphocytes. The urine, which was obtained after intravenous fluids were begun, showed a specific gravity of 1.024 with 2 plus albumin, 3 plus sugar, 2 plus acetone and diacetic acid. The sediment contained 3-4 red blood cells per high power field. Lumbar puncture per-

TABLE III.

No.	STATISTICAL DATA	SPINAL FLUID		BLOOD STREAM	FOCUS OF INFECTION	TREATMENT AND SURGERY	DAYS IN HOSPITAL	RESULT
		CELL COUNT	TYPE					
1.	White female age 32	700	I	Negative	Mastoid type I	Sulfadiazine and right radical mastoidectomy	33 days	Alive.
2.	Negro female age 50	2,970	III	Negative	Otitis media	Sulfapyridine and right radical mastoidectomy	3 days	Died.
3.	*Negro male age 39	13,500	XVII	Negative	—	Sulfapyridine and repeated lumbar puncture	42 days	Alive.
	2nd "	19,700	XI	Negative	Pansinusitis	Sulfapyridine	16 days	Alive.
	3rd "	2,250	XXXIII	Negative	Pansinusitis	Sulfapyridine and radical sinusectomy	85 days	Alive.
4.	White female age 41	11,000	IX	Not cult.	Mastoid	Sulfanilamide and left mastoidectomy	36 days	Alive.
5.	White female age 17				Frontal sinus	Penicillin and frontal sinusectomy	21 days	Alive.

\*Recurrent pneumococcic meningitis.

and brain abscess was made. Following this she was sent to this hospital.

On admission the temperature was 103, pulse 122, respiration 22, and blood pressure 120/60. She was a fairly well developed and well nourished young woman who appeared listless, stuporous, and responded only in monosyllables. The pupils were equal and reacted to light. The right fundus showed a large hemorrhage in the right temporal quadrant, and the disc was hazy. There was right external conjugate deviation, and a questionable left facial weakness. No discharge was noted from the ears.

formed shortly after admission gave an initial pressure of 400 mm. water, and contained 700 white cells with 90 per cent polymorphonuclear ones and 10 per cent lymphocytes. Direct smear, typing and culture showed gram-positive diplococci identified as pneumococci type I.

The staff otolaryngologist saw this patient the next morning and on examination found a perforated right ear drum with a serosanguineous discharge and also a thick yellow posterior-nasal discharge. There was definite tenderness over the right temple. It was decided to do a right mastoid exploration imme-



diately, and following blood transfusions and intravenous anti-pneumococcic serum, this was done. She had been receiving sulfadiazine since admission. At operation under local and pentothal anesthesia a complete mastoidectomy was performed with exposure of the sigmoid sinus, temporal lobe dura, and bony labyrinth. The operative diagnosis was acute-subacute purulent mastoiditis.

There was a critical post-operative course and treatment with sulfadiazine and anti-pneumococcic serum was continued. The sulfadiazine blood level reached a high value of 25 mgm. per cent on the first post-operative day. Crystals and blood were present in the urine. The dosage was adjusted and the urine cleared without complication. Two days post-operatively she was conscious and answering questions. Several lumbar punctures were performed and on the sixth hospital day the fluid was clear. The cell count was 44 with 41 per cent polymorphonuclears and 3 per cent lymphocytes. Other than for slight edema about the right eye and vertigo in the upright position she continued to improve rapidly. Discharge was on the 28th day after admission.

The patient was last seen in the ear, nose and throat clinic two months after discharge from the hospital. The only complaints at that time were slight diplopia when lying down, and occasional pain over the right eye. She was discharged to return if necessary.

This case represents one in which we believe operation with successful drainage of the infected sinus, even in the face of tremendous odds, was responsible for the eventual recovery. Another very similar patient to this one was a 18-year old girl with purulent frontal sinusitis with meningitis. In spite of a temperature of 104, delirium and unconsciousness, this patient was operated on successfully and left the hospital on the 20th day.

The next case is one of recurrent meningitis. In the 28 patients we have two cases of recurrent meningitis.

*Case No. 6.* J. P., No. 75196, a 38-year old single Negro man, was brought to St. Philip Hospital by the city ambulance on January 16, 1940.

He was comatose and no history was available.

Physical examination revealed a well developed, poorly nourished Negro man lying quietly in bed. He resisted all attempts at examination. His temperature was 103, pulse 76, respiration 24, and blood

pressure 145/100. The pupils were equal and reacted to light. The external ears were negative, but the tympanic membranes could not be seen. There was marked nuchal rigidity. Examination of the lungs, heart and abdomen was negative.

Laboratory work disclosed an erythrocyte count of 5,740,000 with 88 per cent hemoglobin. The white count was 24,800 with 91 per cent polymorphonuclears, 7 per cent lymphocytes, 1 per cent eosinophiles, and 1 per cent monocytes. Lumbar puncture revealed purulent fluid under increased pressure with a white cell count of 13,000 with 97 per cent polys. Direct smear showed occasional gram-positive diplococci which were cultured as pneumococci type XVII.

Following lumbar puncture the patient aroused enough to say that his right ear had been aching since the morning of admission. Examination by the Otolaryngologists was negative. No roentgenograms were taken.

Treatment was undertaken with sulfapyridine and repeated lumbar punctures. Gradually the signs of meningitis disappeared. Convalescence was uneventful except for leucopenia without granulopenia, which was treated with fairly large doses of intramuscular liver extract, and two injections of pentonucleotide. He was discharged as cured on the 27th hospital day.

*Second Admission:* On January 8, 1941, he was admitted with the history of having gone to work in the morning feeling well. Later in the day he complained of headache and pain in his stomach. Shortly before coming to the emergency room he had had a generalized convulsion.

On examination he was stuporous and acutely ill. Again all attempts at examination were resisted. The ears and sinus seemed normal to clinical examination. The neck was very stiff. There was a questionable Babinski sign on the right foot. During the examination the patient had a convulsion which began with a turning of his head to the right, and tonic spasm of the left side of his body. This gradually spread over to the right and became clonic. Following this he became deeply comatose.

The routine laboratory work was in keeping with an acute infectious disease. Lumbar puncture revealed purulent fluid and type IX pneumococci were demonstrated by direct Neufeld typing.

He was treated with sulfapyridine by hypodermoclysis, and two days later was conscious and re-

sponded to questions. Further history at that time revealed that two weeks before admission he had had a severe cold. There had been no chest pain or hemoptysis. A roentgenogram of the chest only showed slight prominence of the hilar markings. The sinuses and ears were also examined and showed some thickening of the mucous membrane of the frontal sinus especially on the right side. There was thickening of the ethmoids, and in the right antrum there was a moderate density suggesting fluid or pus. Both antra were irrigated and no pus was found. Culture of the irrigating fluid was negative.

His convalescence was uneventful except for extensive herpes of the upper lip. No leucopenia developed as in his first admission. He was discharged on the 17th day after admission.

*Third Admission:* This patient was readmitted on April 2, 1941, with the following history. He had gone to work feeling well. Around noon he began to complain of violent headache and returned home. Several hours later nausea and vomiting developed, and one hour before admission he had a generalized convulsion.

Physical examination was essentially as before. He resisted all efforts to examine him. The temperature was 104. Examination of the ears, eyes, nose and throat was negative clinically. His neck was stiff. The lungs, heart, and abdomen were normal. Lumbar puncture showed purulent fluid under pressure and type XXXIII pneumococci were demonstrated.

Treatment was begun with sulfapyridine and repeated lumbar punctures. Roentgenological examination of the sinuses revealed complete clouding of the right frontal sinus, the right ethmoids, and an oval density in the lower two-thirds of the right antrum suggesting a polyp or mucocele. The mastoids and lateral sinuses were clear. The spinal fluid remained purulent for six days and cultures were positive for the same organism. He recovered his mental equilibrium very slowly. Repeated roentgenological examination showed extension of the clouding to the left ethmoid and frontal sinuses. Sulfapyridine was discontinued on the 26th day because of red cells and crystals in the urine.

A radical sphenoid, ethmoid, and frontal sinusectomy was carried out on May 8 under avertin anesthesia. Pus was found in the sinuses but the culture was negative. The remainder of the hospitalization was quiet. The day before discharge roent-

genograms of the sinuses showed the same polyp in the right antrum, and complete clouding of the left frontal, ethmoid, and antral sinuses. The remainder were clear. The patient was last seen on October 2, 1941, at which time he did not have any complaints.

This case illustrates a patient with recurrent pneumococcal meningitis who came to the hospital each time with essentially the same history. With each infection there was demonstrable a different type pneumococcus. In spite of the fact that on two previous admissions no clinical evidence of sinus infection was elicited, the subsequent course of events makes it seem that he had a chronic focus of infection in the sinuses which periodically seeded organisms into the cerebrospinal fluid. The other case of recurrent meningitis was included in our second group of patients. This patient had four separate hospitalizations without surgery, and the infecting pneumococcus was different on three separate occasions. In the interim between two of the admissions she complained continually of a clear fluid which persistently dripped from the end of her nose. Her subsequent course is not known since she has not been seen since the last discharge.

The one death which occurred in this third group of patients was in a 50-year old woman with diabetes mellitus and chronic suppurative otitis media. She underwent operation on the second hospital day, but succumbed in spite of sulfapyridine and blood transfusions. The diabetes was under control. The organism responsible was a type III pneumococcus. Permission for autopsy was refused.

#### COMMENT:

The majority of the literature on pneumococcal meningitis, in the last five years consists of single case reports of individual recoveries following the use of sulfonamide and recently penicillin therapy. Several significant reviews have appeared.<sup>8,3,12</sup> In many of these successful cases operation was performed in conjunction with the chemotherapeutic treatment, but little is said about the relative value of the procedure. Gilmore and Sacks were in favor of early surgical drainage of the primary foci of infection, and reported two cases in which recovery followed this method of treatment.<sup>8</sup> They quote from Kolmer<sup>9</sup> and we want to re-emphasize this paragraph from this article.

"Septicemia is not due as much to multiplication of bacteria in the blood as to constant invasion of the organisms proliferating in the primary and secondary



foci of infection. Therefore, the first principle in treatment should be the establishment of the best possible drainage of these foci."

We believe that this principle applies to infection in the cerebrospinal fluid from sinus foci, and feel that our results in this comparatively large group of patients bear out this point. Not all writers are in agreement with this view. Many of them feel that operation should be delayed until some clinical response is shown.<sup>13,14</sup>

Concerning recurrent pneumococcic meningitis, since recently several papers have appeared on this subject<sup>4,5,6,7</sup> we feel that this entity is due to repeated infection from a latent focus. Labby believes that individual lack of immunity to a specific type or different type organism plays the important role. An interesting point in this regard is the rapidity with which the infection overcomes the individual. Both of our cases, one of which has previously been reported, gave clinical histories almost identical with Labby's patient. It is impossible to say that both these patients have been cured permanently. One had surgical drainage of infected sinuses, the other did not. Neither of them has been heard from in the last three years. Roentgenograms of Labby's patient showed "a pansinusitis with right frontal sinusitis and surrounding otitis". Cultures of the antrum were negative, but it is not stated whether these were taken before the penicillin therapy was begun. Cultures from the antrum of our patient were also negative, but this was after prolonged treatment with sulfapyridine.

#### SUMMARY:

Twenty-eight cases of proven pneumococcic meningitis were divided into three clinical groups. First those without evidence of focus involvement, the infection being primarily either in the lung or blood stream. Secondly, those with a demonstrable focus in one of the nasal or auditory accessory sinuses, but who did not have surgery. Thirdly, those with a demonstrable focus in the sinuses who underwent operation. The mortality in the first group was 87 per cent, in the second 66 per cent, and in the third 20 per cent.

The authors believe that patients with pneumococcal meningitis who have sinus involvement should have early and thorough drainage.

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## SULFONAMIDE PACK IN POSTOPERATIVE OTORRHINOLOGIC WOUNDS

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The introduction of the sulfonamide compounds resulted in a welcome revision of previous methods used in the treatment of surgical wounds. Reference to the medical literature will quickly disclose a large number of articles dealing with the use of these compounds applied directly to the wound site.

In certain instances, there may be disadvantages in the application of the sulfonamide compounds in the form of solutions or powder that make their use less effective than desirable. This is particularly true in cavities such as the paranasal sinuses and temporal bone after operative procedures where packing of the cavity may be indicated.

The regional conditions, anatomical and bacterial, present immediately following operations of the paranasal sinuses and mastoid bone differ somewhat from those present in other parts of the body such as the trunk or extremities. Anatomically, in the case of the nasal sinuses, there is the presence of bone in the form of a cavity, which is lined with respiratory epithelium whose continuity has been disturbed. In the postoperative mastoid wound there exists the presence of bony cavity with or without exposed dura and with no epithelium (simple or complete mastoidectomy) or a bony cavity with a partial epithelial surface (tympanomastoidectomy or radical mastoidectomy). With very few exceptions, (fenestration operation for otosclerosis) infection is generally present and constitutes the sole indication for operation.

In the Medical College of Virginia Hospitals, we have had an opportunity to observe the results obtained by the various methods of application of the sulfonamide compounds to postoperative mastoid and paranasal sinus cavities. Inasmuch as one particular method of wound treatment has proved far more satisfactory than any of the others, it is felt that it should be presented for what it may be worth.

## PROCEDURE

The material required for application of the method consists of: (1) gauze strips, one inch in width, which, in the rolled state, have been saturated with white vaseline and sterilized in the autoclave, and (2) sulfonamide powder. This may be used

single as sulfanilamide or sulfathiazole or as mixed powder. The mixed form of  $\frac{2}{3}$  part sulfanilamide and  $\frac{1}{3}$  part sulfathiazole has been found most satisfactory by us. It is prepared at the time of the operation as follows: The sterile sulfonamide powder of choice is applied to the entire unrolled surface of the vaseline impregnated gauze until each side is uniformly coated with the powder. The gauze is then ready for use. For best results, it is necessary to remove all blood, infected tissue, and debris from the cavity to be treated. When a clean cavity is obtained, it is filled with the sulfo-vas gauze to the degree of pressure desired. It may be left in situ undisturbed for as long as necessary. In sinus cavities, from one to three days, and in mastoid cavities, from two to five days, is the average length of time which has been found satisfactory by us. The packing may be removed in stages or at one time as indicated. The same type of packing may be used for replacement when necessary.

## ADVANTAGES

A comparison between the results obtained by methods previously used in the management of otorrhinologic surgical wounds and the results obtained by the use of sulfo-vas gauze in thirty patients, equally divided as to cases of surgical sinusitis and surgical mastoiditis, showed that the latter method gave a much more uniform and consistently better result in decreasing complications and drainage, and in shortening the hospitalization period.

The main points in favor of the method rest in the fact that it offers a means whereby the sulfonamide compound is kept in situ in concentration. It can be left in place, or removed as desired. It is of particular value in preventing undesirable clot formation in a cavity. The drug is kept in contact with the cavity wall where its value is most effective. The method offers a means which prevents the drug from being removed from the cavity by continuous bleeding or by a layer of coagulated blood between the cavity and the drug. Thus, in the absence of a diffusely infected blood clot, profuse foul wound discharge and infected granulation tissue, delayed heal-

ing is kept at a minimum. Instead, the result is a clean cavity, with minimal odor or discharge, and rapid, uncomplicated healing occurs readily.

#### CONCLUSION

Sulfo-vas-gauze can be used satisfactorily in otorhinologic surgical wound cavities, and has certain advantages over solutions and powders in such wounds. These findings are in agreement with the report of Guerry and Putney<sup>1</sup> who used sulfathiazole gauze paste, prepared with sterile water, in mastoid

wounds and noted a marked decrease in the period of wound drainage and hospitalization period. The use of the sulfonamide powder applied directly to vaseline impregnated gauze was first suggested to the writer in 1940 by Dr. H. I. Lillie, and Dr. H. L. Williams, of the Mayo Clinic.

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### INDICATIONS FOR OOPHORECTOMY\*

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Being so often the site of disease, the ovary naturally often attracts the attention of physicians, and the operation of oophorectomy is a common one. In addition to the frequency of ovarian disease, there are other factors which may play a part, sometimes unjustifiably, in the frequency of this operation. These factors are that the organ is not a vital one, it is easily removed, and its absence is inconspicuous. If the Maker in all His wisdom had seen fit to suspend the ovary externally as He did its counterpart in the male, the operation of oophorectomy, though easier still, would probably be performed less frequently.

It is a cardinal principle in medicine that the treatment of a disease should not be worse than the disease itself. The removal of all ovarian tissue, causing as it does the menopause, brings on a sequence of anatomic, physiologic, and psychic changes almost always undesirable and often very distressing.

Ignorance of ovarian physiology and pathology is often a factor in the improper removal of the ovary. That such ignorance exists is easily understood. Particularly the pathology of the ovary is so complicated, and in many instances so poorly understood, that even the experts are in a sense ignorant. Yet the better the understanding of ovarian pathology, the better will be the treatment of ovarian disease.

The ovary has rightly been said to be a hotbed of disease. This is due in large part to the totipotency of its tissues which allows the formation of all kinds of neoplasms, to its constant state of flux which tends toward physiologic disturbances, and to its proximity to the fallopian tube and other organs from which infections so often spread to it.

#### INFECTIONS

In recent years there has been a laudable trend towards conservatism in the treatment of pelvic infections. This has been accentuated since the advent of sulfonamide therapy; and it will be further advanced by the use of the antibiotics, penicillin being at present the most potent drug available in the fight against the gonococcus.

Infections of the ovaries are usually secondary to infections of the tubes, but may occur by extension from other contiguous organs, or may be metastatic from more remote ones. The infections are usually caused by the gonococcus or other common pyogenic organisms. Conservative therapy with rest, heat, and the drugs noted above will usually result in cure without operation. Even when, and if, in the later stages of the infection operation is indicated, the ovaries can usually be salvaged completely or partially. It should be borne in mind that an ovary may be badly infected and yet capable of recovery if given sufficient time and conservative treatment.

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\*Read by invitation before Staff Meeting of Grace Hospital, Richmond, April 5, 1945.

At operation the tube should be carefully separated from the ovary and the latter with its blood supply should be left intact, if possible. However, if the ovarian infection is tuberculous, as it is relatively infrequently, and the nature of the disease recognized, ovarian extirpation is indicated.

#### NONNEOPLASTIC CYSTS

In discussing the indications for oophorectomy it is essential to distinguish between the retention cysts and the true neoplastic cysts properly known as cystomas. The retention cysts are nonproliferative and are not true neoplasms. The prominent members of this group are the follicle cysts and the corpus luteum cysts. Some degree of cystic change in the ovary is inherently normal. However, because of abnormal hormonal influence, or thickening or adhesions of the surface of the ovary preventing rupture, or for reasons not known, sometimes excessive secretion collects in and enlarges a follicle or a corpus luteum beyond normal limits, and thus cyst formation occurs. This type of cyst seldom reaches large size, and symptoms are more or less infrequent. These cysts often regress spontaneously by absorption with or without rupture. Rarely do they call for operation. When they do because of unusual symptoms, or when they are found at operation for some other condition, the treatment should be conservative. The smaller cysts may be treated by puncture which hastens their absorption. The medium sized or larger ones can be treated by opening them and enucleating their lining and cutting away any redundant wall that remains. Suturing with very fine catgut on a fine needle may be used when indicated. Occasionally an involved portion of the ovary may be resected taking only as much ovarian tissue as is necessary. Rarely, if ever, should the entire ovary be removed.

Care must be exercised not to remove a corpus luteum of pregnancy. The removal of such in the earlier months of pregnancy will often result in abortion.

The large theca-lutein cysts of the ovaries which form in the presence of hydatidiform mole should not be removed. They will regress spontaneously when the primary condition is taken care of.

There is a rare condition in which numerous small cysts of the ovaries with excessive luteinization are associated with signs of masculinization. Wedge resection of the ovaries in this condition has reportedly

given good results. We have had several cases so treated. The condition is not clearly understood and the proper treatment still uncertain.

Endometriomas are in a sense retention cysts. They present a special problem and will be discussed later.

Parovarian cysts do not arise in the ovary. They infrequently require operation. Operation consists of removing the cyst itself, leaving the ovary intact.

#### BENIGN NEOPLASMS

Benign neoplasms whether cystic or solid usually call for the removal of the involved ovary. When the tumor is bilateral, usually both ovaries must be removed; in certain instances, however, resection can be done leaving viable ovarian tissue intact.

Pseudomucinous cystadenomas and papillary serous cystadenomas are fairly common benign cystomas which almost always require removal of the involved ovary or ovaries. Rarely these tumors are carcinomatous; if there is gross evidence of malignancy both ovaries and the other internal genital organs should be removed.

Dermoid cysts are common benign tumors, usually unilateral. They tend to occur in young women. In most cases the tumor can be dissected from the ovary, leaving adequate ovarian tissue, even though at first this does not seem possible. It is especially desirable to do this when the tumors are bilateral.

Fibromas are usually unilateral and in rare instances associated with ascites and with hydrothorax. The fluid should not lead one to make the diagnosis of malignancy. The treatment is oophorectomy. In younger women, if one is reasonably certain that the tumor is not a malignant one, resection of the involved ovary may be the best practice. A Brenner tumor is a rare benign solid tumor indicating oophorectomy. The rare benign adrenal tumor of the ovary produces virilism. Unilateral oophorectomy is indicated.

#### MALIGNANT NEOPLASMS

These tumors differ in their degree of malignancy. All but those of lowest malignancy require radical pelvic surgery, i.e., bilateral salpingo-oophorectomy and hysterectomy, if they are still in the operable stage. Those requiring this radical surgery are most of the common solid carcinomas and adenocarcinomas, the rare sarcomas, and the rare solid teratomas.

The granulosa cell tumor and allied tumors, and



the arrhenoblastoma are interesting functioning tumors of low malignancy. The former produces the estrogenic hormone excessively. In the young woman with this tumor, unilateral salpingo-oophorectomy is adequate; in the postmenopausal woman bilateral salpingo-oophorectomy might be indicated. The arrhenoblastoma is a masculinizing tumor. Unilateral salpingo-oophorectomy is the proper treatment. A dysgerminoma is a nonfunctioning tumor of a low grade of malignancy. It probably arises from cells which date back to a phase when the gonads are undifferentiated. The treatment is unilateral salpingo-oophorectomy if the tumor is well encapsulated, especially in a young person. If the tumor is grossly infiltrative, radical removal of the pelvic organs is indicated.

The ovary is sometimes the site of secondary carcinoma. The Krukenberg tumor is an example of this type of metastatic carcinoma. The involvement is usually bilateral. The primary site should be searched for, the gastrointestinal tract, the genital tract, and the breasts being particularly examined. Oophorectomy may rarely be indicated for palliative reasons even though the primary focus remains.

The treatment of primary carcinoma or sarcoma of the body of the uterus or of the fallopian tube requires concomitant removal of the ovaries, whether or not they are grossly involved by the disease, if the condition is regarded as operable at all. Carcinoma of the cervix is usually treated solely by irradiation. However, if operation is performed both ovaries should be removed. I have made exceptions to this latter rule in cases of intraepithelial carcinoma of the cervix in young women.

#### MISCELLANEOUS CONDITIONS

Endometriosis is a condition in which there is functioning ectopic endometrium. The ovary is one of many sites which may be involved. In any case the condition is dependent on ovarian function and may be relieved by removal of the ovaries. This radical treatment should be avoided in most instances in younger women. Usually an attempt should be made to excise the lesion or lesions if possible or to resect the ovaries if involved. The treatment is often a difficult problem. Usually in young women it is better to do too little than too much, with the hope that the patient will improve follow-

ing such therapy or can be treated symptomatically. Second operations or irradiation may become necessary.

For many years castration has been recommended by some in the treatment of carcinoma of the breast. This procedure is not yet established on solid ground and must be regarded as still experimental.

#### SUMMARY AND CONCLUSIONS

During the child-bearing period and possibly and to a much lesser extent during the remainder of a woman's life the ovary is important to her welfare. Diseases of the ovary are common. The treatment of these diseases should be as conservative as is consistent with the health and happiness of the patient. The relief of symptoms is not necessarily justification for oophorectomy. Often no surgical treatment is indicated. Many times when operation is indicated, puncturing, enucleations, and resections will suffice. Some conditions require simple oophorectomy. But in carcinoma of moderate or high malignancy and in certain other malignant neoplastic diseases, radical surgery must be practiced if the condition is operable at the time the patient is seen.

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## AMEBIASIS AND AMEBIC DYSENTERY

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So vast is the problem of malaria in World War II, few of us have turned our attention to amebic dysentery which promises to rank second to malaria in importance in the present war and postwar period. Amebic dysentery is spread widely through the tropical and subtropical lands in which our troops are fighting, and it is not unreasonable to assume that this disease will become more widespread in this country as the number of returning carriers increases.

Amebic dysentery is a protozoan disease caused by the *Endameba histolytica*, the organism existing in the infected individual as a tissue autolyzing trophozoite or in the form of a cyst. As only the cyst form is thought to be infective to man, the dog and the cat, which harbor and pass only the trophozoite, cannot be blamed for any part in the spread of amebic dysentery. Man alone, for all practical purposes, is responsible for the passage of amebiasis to his fellowman through the fecal discharge of cysts. Such infected feces finds its way to the oral cavity through contaminating water, carrier flies and cockroaches, vegetables fertilized by human feces, and possibly food handlers.

Once in the oral cavity the adult cysts with four nuclei manage to reach the alkalinity of the small intestine where the cyst wall ruptures, freeing the four nuclei. These proceed to form four or eight small trophozoites, which initiate infection in the lower ilium and cecum by burrowing into the crypts, autolyzing tissue cells and dividing to form more colonies. This discrete, pin head size lesion may be the limit of a superficial mucosal lesion but generally the trophozoites work their way into the submucosa, proceeding radially from this base to form a large bubbled lesion which is flask shaped. This is the uncomplicated amebic lesion. More diffuse channeling back into the muscularis usually follows with a ragged undermining of tissues.

From this cecal lesion where stasis favors the inroad of the trophozoite, secondary foci may be formed. As the organisms increase they may be carried lower down into the bowel to initiate other ulcerations in

the transverse colon, the sigmoid, and the rectum. Through invasion of venules the portal circulation is reached and there may follow invasion of the liver and, less often, the lung, the brain, or the skin. The rarity of lesions of the liver is unusual and it has been suggested that an amebostatic or amebolytic fraction of the liver may be responsible for this relative immunity of that organ.

On the other hand the trophozoite may pass on without reaching the tissues, rounding up its downward passage to form a cyst which is evacuated. There must be hundreds of such cases for each infection.

Before discussing amebic dysentery, it would seem necessary to say a few words about amebiasis. The seemingly relatively benign infection with amebae may well, under more favorable conditions, go into true amebic dysentery. The existence of a carrier stage in which the organisms are present without tissue damage to the host is doubted by most investigators. It is felt that *Endameba histolytica* is always pathologic.

As with bacterial infections in general the resistance of the host, the virulence of the organisms, the number of organisms and, probably, certain immunologic factors are of importance in determining the severity of amebiasis in any given case. Therefore, one sees amebiasis in an individual who is not cognizant of symptoms, the lesions in such a case being confined to specific areas. So gradual is the display of symptoms such as loss of weight, vague gastrointestinal pains, restlessness, and fatigue, they are unrecognized by the patient.

In a second classification are the symptomatic cases which may be divided into three classes: A. asymptomatic with vague gastrointestinal pain, alternating diarrhea and constipation; B. syndromic with cecal lesions giving rise to symptoms simulating chronic appendicitis, peptic ulcer or chronic cholangitis; C. acute and chronic amebic dysentery due to lesions throughout the colon and especially in the rectum.

Undue strain, overwork, and undernutrition ap-

pear to be capable of throwing the asymptomatic or syndromic types into acute dysentery. It is important to bear this in mind for most of us think only in terms of amebic dysentery. As a matter of fact, amebic dysentery is a comparatively rare entity in the United States, while amebiasis is extremely common. In numerous surveys in this country from Louisiana as far north as Michigan where the surveys have been made by competent individuals using acceptable methods on a sufficient number of specimens, the incidence of amebiasis in clinic populations has ranged from 10 to 16 per cent.

Symptomatically acute amebic dysentery is a "walking dysentery" with slight fever, mild tenesmus, moderate or no leukocytosis, and frequent, copious stools. In contrast, acute bacillary dysentery with which it may be confused is a "lying down dysentery" with high fever, marked tenesmus and leukocytosis, especially later in the disease. In bacillary dysentery stools are scanty and much more numerous. In the last analysis, however, the diagnosis of amebic dysentery is a laboratory one, it being necessary to find the trophozoite in the acute form and the cysts or trophozoites in the chronic.

The most common complication of amebiasis and amebic dysentery is, as might be expected from the pathology, liver abscess. Next in importance is empyema with a bronchial fistula due to rupture of an amebic abscess of the liver through the diaphragm. Less often there is found to be an amebic abscess of the brain, involvement of the skin, or an ameboma of the intestine simulating carcinoma of the colon.

I mention these complications at this point to emphasize that they do occur with amebiasis in the absence of any outright acute amebic dysentery. As a matter of observation amebic cysts are found in the stool in only approximately 30 per cent of the cases of amebic liver abscess, and only 22 per cent of liver abscesses have diarrhea at the time. Fever, tenderness, and pain over the liver area are the only signs of liver abscess in 85 per cent of the cases.

The diagnosis of amebiasis and amebic dysentery demands the close cooperation of the physician and the technician. The physician must know the fundamental pathology of amebiasis in order that he may collect the proper specimen. The technician must be especially trained to recognize both the trophozoite and the cyst and must employ the best technique in making the examination.

With this in mind it seems wise to review the essential pathology a little more in detail. As the trophozoite colonies multiply in the original ulcer in the cecum, many fall into the lumen and are carried on down the bowel where they may attach to form secondary lesions. These new foci may be in the ascending, transverse, or sigmoid colon, or in the rectum, where ulceration results in amebic dysentery. Autopsy statistics from regions where amebiasis is quite prevalent reveal the following frequency of amebic lesions: ileum 5 per cent, cecum 57 per cent, appendix 33 per cent, ascending colon 16 per cent, transverse colon 8 per cent, sigmoid 33 per cent, rectum 40 per cent. In other words, proctoscopic examination under ideal conditions may be expected to reveal only 40 per cent of the cases of amebiasis and largely only those with outright dysentery.

The cycle of the parasite must be understood as well. As the trophozoite passes down the lumen of the intestine, the change in the fecal content from a semi-fluid to a formed stool is associated with a change in the parasite. The trophozoite rounds up, discards undigested food in preparation for encystation, forming a metacyst and then a cyst which is discharged in the formed stool as a nucleated cyst with definite characteristics with iodine stains. This transformation from the trophozoite to the cyst is accomplished probably through the medium of dehydration of feces. Because of this in the examination for *Endameba histolytica* one finds in a liquid stool only trophozoites, in one which is semi-formed both trophozoite and cysts, and in the formed stool only cysts.

In searching for amebiasis at least three stools should be examined and these at intervals of ten days. It appears that there is a rhythmic discharge of cysts, this rhythm being about ten days. The zinc sulphate flotation concentration technique is considered best for the examination, the fresh films being stained with D'Antony's iodine. Failure to find cysts in formed stools may mean that there is a cecal lesion where obstruction and fermentation are destroying the cysts. With such lesions of the upper bowel purgation frequently must be resorted to if the cysts are to be found. Inasmuch as the use of oil, bismuth, Kaomagma, barium, and magnesia increase the difficulties of diagnosis, saline purgation should be used. Phospho-soda with a Ph of about 7 gives the best result, 4 drams of phospho-soda being taken by the patient upon retiring. The



following morning the purgation specimen is collected and brought in for examination. The same morning about one and a half hours before the patient is to come for proctoscopic examination, an enema of one quart of saline should be taken. This is expelled and repeated, the last portion of the second enema being collected for examination. Once the diagnosis of amebiasis is confirmed treatment should be started. More recently the iodine drugs, especially diodoquin and chiniofon, are being used in preference to emetine. A course of treatment with diodoquin consists of three tablets three times a day for twenty days. There are no toxic reactions. If chiniofon is used, four tablets are given three times a day for seven to ten days. With this drug the patient frequently will develop a severe diarrhea after 48 hours. This can be controlled easily with paregoric. An arsenic preparation, carbarsone, 1 tablet twice daily for ten days is equally effective and widely used by the Army.

Emetine has been found to be only one-third as effective as the above drugs in amebiasis, being inef-

ficient in intestinal disease and in unabsorbed liver abscess where blockage of the vessels prevents its reaching the amebae. However, in acute amebic dysentery emetine causes rapid recession of symptoms, one ampule usually being effective in curing the diarrhea. Thereafter, the iodine drugs can be started. The most effective use of emetine is in the relief of acute symptoms and in visceral lesions such as liver abscess and lung involvement. Emetine is the only drug requiring hospitalization, as the toxic manifestations, especially vasomotor insufficiency and toxic myocarditis, are at times severe.

With the world-wide distribution of amebic disease and the greater virulence of the strains in the warmer climates, our armed forces can be expected to suffer a high morbidity from amebic dysentery. From this it must follow that with the return of many of these the number of carriers in this country will be greatly increased. It behooves us as physicians responsible for the diagnosis, treatment, and prevention of the spread of amebic disease, to widen our concept of this disease.

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## THE NUTRITION CLINIC

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The Nutrition Clinic, only one of its kind in Virginia, was organized early in 1943 to serve patients in the Outpatient Clinic of the Medical College of Virginia Hospital. At that time, all dietary teaching of patients was done on one afternoon a week, by a hospital staff dietitian, who came over from the hospital on her time off. On this afternoon, only diabetics and those wanting to lose weight were seen. From an average of about 24 patients a month under this plan, the Nutrition Clinic has now expanded until it sees about 85 patients a month, and the number is steadily increasing. All types of ambulatory cases are seen, including ulcer, gall-bladder, underweight, and many others.

Patients may be referred from any of the 29 clin-

ics operating in the Outpatient Department. A clinic staff nutritionist (there are two) attends the following clinics: medicine, orthopedics, rheumatic fever, diabetic, admitting and prenatal. At these clinics, the doctor writes into the patient's chart the dietary prescription. For example, in the diabetic clinic, the physician writes the grams of protein, fat, and carbohydrate he wishes the patient to have. The nutritionist then calculates the diet, translating it into terms of amounts of foods which the patient may eat daily.

In every case, an attempt is made to make the diet follow the pattern of the patient's present food habits as closely as possible within the limitations of his diet. An idea of the present dietary habits is gained

by taking a dietary case history on every patient who comes to the clinic. Thus, if he prefers his hearty meal at mid-day instead of night, his diet is planned to conform to that arrangement, if possible.

Each dietary order is filled individually. No printed diets are given to patients, since the staff at present is able to handle all of the cases personally, adapting the diet to the patient wherever possible.

Patients are given return appointments if it is felt that they may need follow-up teaching, or if they are on a weight-reduction or weight-gaining program. An attempt is made to educate the patient to the effect his food habits have on his condition, and to get him to cooperate.

Sometimes a patient may say he is willing to follow a diet, but unable to do so because he has too little money. Such cases are referred to the social service department to be investigated. Market lists, with the current prices of foods included, and the total cost of the diet are prepared, at the request of social service workers, as an aid in determining the amount of financial assistance needed. In order to make this as accurate as possible, several markets and grocery stores are visited weekly and prices obtained, as well as changes in ration point values, and supplies of least expensive and most nutritious foods are noted.

This same type of service, that is, a market list and meal plan for a week, may also be worked out for families who have enough money to have the right kind of food, but are unwise in purchasing or preparing it and are thus improperly fed.

### Medical College of Virginia—Board of Visitors.

According to constitutional provision recently enacted by the General Assembly, members of the boards of visitors of State educational institutions shall hold office for only two or four year terms. This ends the tradition that members of the Board of Visitors of the Medical College of Virginia were elected for life. In the reorganized board just appointed by Governor Darden, there appears only one new name, that of Dr. Joseph D. Collins of Portsmouth, to replace Mr. F. Cleveland Davis who asked to be relieved of this service.

Appointments just made for a period of two years

At the request of various social agency workers, home visits are made to families needing any kind of nutritional help which can best be given in the home. Usually these visits are made with a nurse or social worker.

Student dietitians spend a month in the Nutrition Clinic as part of their year of internship at the hospital. Under supervision, they take part in all the activities of the clinic. Dealing with outpatients involves a shift in viewpoint from that of working with hospital patients. This helps to give them a broader view of the problems encountered in working with people.

Some time is spent in classes on various phases of nutrition for medical, dental, pharmacy and nursing students. This may be a series of lectures or a single discussion of a specific subject.

Educational nutrition exhibits are set up in the lobby of the Outpatient Clinic each month. These are intended for the general public, so each one is planned to tell a story in simple language. Food models or pictures are usually displayed to make the exhibit more effective.

The Nutrition Clinic cooperates on special nutritional problems with the other departments. For example, at present the school of dentistry is working on a program aimed at controlling dental decay. This involves some dietary teaching, and the clinic staff supplies this teaching service.

The staff at the nutrition clinic is glad to give assistance on nutritional problems. Physicians or others interested may address inquiries to the author of this paper.

are: Dr. Collins; Dr. W. W. Wilkinson, La Crosse; Dr. J. B. Fisher, Midlothian; Dr. Hunter H. McGuire, Winchester; Dr. Claude B. Bowyer, Stonega; Dr. J. McCaw Tompkins, Richmond; and William H. Schwarzschild, Eppa Hunton, IV, and Lewis G. Larus, all of Richmond.

Those for a four year term are: Dr. John Bell Williams, Richmond; Dr. W. L. Harris, Norfolk; Dr. Stuart McGuire, Richmond; Dr. W. D. Kendig, Victoria; Dr. Douglas VanderHoof, Richmond; J. E. W. Timberman, Alexandria; and Robert T. Barton, Jr., Hugh Leach, and Samuel M. Bemiss, all of Richmond.

## THE SERVICE OF THE PHARMACIST

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Pharmaceutical science has advanced rapidly in the last score of years. Numerous discoveries and newer applications of older knowledge have literally rolled in like a series of heavy waves crashing on a rocky shore.

Five years ago we had barely heard of antibiotics. Several sulfonamides have been introduced in this period, others have been put to new uses, dicoumarin has appeared, likewise a useful form of curare, synthetic antispasmodics, a cholecystographic chemical, DDT, and a host of other preparations.

Today the busy physician has little time for reading and sifting the facts offered in the journals and by the detail men who represent the manufacturers.

It is our belief that the modern well-trained pharmacist can and should serve as the impartial link between physician and patient on the one hand, and physician and manufacturer on the other. He has little interest in the promotion of unworthy or useless products for he knows this activity eventually reflects most strongly on his own integrity. He therefore can be relied upon to furnish the most accurate information and assistance of which he is capable. The physician can use his help to determine the most feasible dosage forms, to learn the relative costs of various forms of the same drug, and for many other purposes. His ability to compound extemporaneously "tailor made" remedies, coupled with his familiarity with the many products commercially available, makes of him a valuable ally, but one too infrequently used.

It must be emphasized, however, that we refer to the well-trained, professionally-minded pharmacist. Unfortunately not all fall into this category, and it therefore behooves the conscientious practitioner to determine and suggest suitable pharmacies to the patients. The remainder of the paper is divided into two parts for the reason that the hospital and retail pharmacists serve somewhat differently their respective patrons, both lay and professional.

### THE HOSPITAL PHARMACIST

One of the phenomena of medical care in the United States is the relatively slow growth of good pharmacies in hospitals. As early as 1767, one finds some Pennsylvania physicians of the hospital staff petitioning the Board of Managers for better equipment and a small manufacturing laboratory for their apothecary.<sup>1</sup> The large number of hospitals still without any real pharmaceutical care in this modern age, constitutes the phenomenon alluded to.

This section of our paper will be based upon the services rendered at the Medical College of Virginia. We are most familiar with this institution and believe its activities to be fairly representative of what a good hospital pharmacy can furnish in services.

Aside from the obvious prescription filling, the hospital pharmacist can and does render a variety of other forms of assistance to his institution. In our hospital, the staff of four full time pharmacists (and one night pharmacist) are responsible for the following services:

*Parenteral Solutions:* About twenty types of parenteral solutions are manufactured in our pharmacy. Our annual output of dextrose solutions in various strengths and sizes averages over 30,000 bottles at an estimated cost of 35¢ each. Numerous special fluids are prepared on order in addition to procaine, sulfonamides and other commonly used sterile solutions. Our output is limited chiefly by considerations of space and equipment.

*General Pharmaceutical Manufacturing:* Our pharmacy produces a large number of special formulas in quantities of five to ten gallons or pounds. In addition, we are able to manufacture a number of standard and official formulas at a considerable saving. Into these two categories fall such items as scalp treatment, anti-asthmatic mixtures, elixirs of vitamin B complex and ferrous sulfate, various ointments, official and otherwise, elixir of terpin hydrate, and many others.



*Research Projects:* Our hospital pharmacy makes its staff and equipment available for any serious research problems brought to it by clinical or pre-clinical divisions. For instance, we cooperate with surgery on burn therapy by preparing several special ointments; with dentistry on its caries-prevention program by the preparation of several special mouth washes. At various times, we have cooperated with the physiology and pharmacology departments.

*Physiotherapy:* This department looks to the pharmacy for the preparation of its histamine and other iontophoretic solutions. We also stock the disinfectant for the pool.

*Clinical Laboratories:* General and special stains for all purposes are made in the pharmacy. This service is economical both in money and time for the laboratory.

*Nursing Staff:* The pharmacy furnishes teaching materials for class work. Through the cooperation of the floor nurses, we keep a close check on narcotics, and a complete control over floor drug stock.

We are about to begin the preparation of adjusted eye solutions for ophthalmology. At present, several unadjusted solutions, and numerous ointments, official and otherwise, are made for this service.

It is felt that the above descriptions, incomplete as they are, can serve to indicate the theme by which we try to operate the hospital pharmacy—"All Types of Services Within Reason." We try to make quickly available the best and most economical forms of drugs without reference to manufacturer. We offer a personal type of service to all departments from the engineering and housekeeping staffs on up to the top of the hospital hierarchy. No request is too trivial to listen to with a serious mien, no task refused that is within reason.

#### THE RETAIL PHARMACIST

The "Scientist on the Corner" can furnish many of the services referred to in the previous section. For example, he can—when called upon—manufacture small quantities of many special formulas, sometimes even at a saving to the physician and the patient. He can make most laboratory stains, and prepare various solutions of numerous types.

The retail pharmacist sees more sick people than many physicians. He is often able to refer individuals to a physician. Since he realizes the danger inherent in the misuse of drugs, he steers many a person from a dangerous, perhaps fatal blunder of self-medication.

The retail pharmacist usually stocks sick room supplies. Most frequently he carries thermometers, syringes and needles, urinals and bedpans, and various other essential accoutrements. This constitutes a service to both the physician and patient.

In a similar manner, he usually stocks the commoner biological products, both immunizing and therapeutic. In this manner, he relieves the physician of investment in refrigeration and supplies, for he knows the value of proper storage of such items.

Certain legal restrictions are placed on all pharmacists, good and poor. All physicians are aware of the general nature of the narcotic and dangerous drug laws, but few there are who realize how often they ask the pharmacist to violate the narcotic regulations. Unsigned prescriptions, incomplete prescriptions, and improperly ordered office solutions are three of the retail pharmacists' "nightmares".

Any pharmacist can sell many dangerous and potentially dangerous drugs over the counter without often being caught. However, the ethical pharmacist feels that his refusal to sell such items is a service to the best interests of the patient and physician.

#### CONCLUSION

We have tried to draw, in the foregoing paper, an accurate picture of a good hospital and retail pharmacy's services to the public and to the physician. We are certain that both can do more than represented herein, for we know of cases in which such situations obtain. We also, in a teaching institution, train our students for more services than mentioned here, because we have faith in their ability to perform increasingly complex tasks.

Finally, we would be the first to admit that not all pharmacies measure up to our standards. However, the number which do is increasing at a helpful rate. Meanwhile, perhaps the physician would do well to offer a choice of pharmacists for the patient when he writes a prescription, just as he would when he refers them to a surgeon or other specialist. Such a course would be of immense value to all groups concerned. It should not be difficult for a physician to acquaint himself with the ethics and policies which govern any pharmacy.

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## OCULOGLANDULAR TULAREMIA, REPORT OF A CASE

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Oculoglandular tularemia, first described by Vail<sup>1</sup> in 1914 and since recognized in many parts of the United States as well as foreign countries, is still sufficiently rare to warrant the recording of individual cases. The present case is also of interest because of the problem in differential diagnosis posed. No attempt has been made to review the literature as excellent discussions are to be found in the articles by Vail Sr.,<sup>2</sup> Vail Jr.,<sup>3</sup> and Francis,<sup>4</sup> the latter of whom has given a comprehensive survey of the world picture of the disease.

## CASE REPORT:

V. C., a seven year old apathetic colored female, was seen in the eye clinic of the Medical College of Virginia on November 2, 1944, with the complaint of a "swollen and running left eye" of one week's duration. Two weeks before, the child had been vaccinated in the deltoid region of the left arm and a "take" had resulted. No history of contact with rabbits could be elicited at that time but at a later date the child admitted having caught and played with a "sick" rabbit at school, two weeks before.

When first seen the lids of the patient's left eye were matted together by thick yellowish exudate which had poured out to encrust a portion of the left cheek as well. Retraction of the lower lid revealed a large ulcer crater involving about one-fourth of the tarsal surface and covered with grayish exudate. The region over the lacrimal sac was swollen and pus exuded from the puncta on pressure. The bulbar conjunctiva was considerably injected and moderate chemosis was present. The left preauricular node was tremendously enlarged and tender to palpation. A healing vaccinal lesion was noted in the deltoid region. A tentative diagnosis of Parinaud's oculoglandular syndrome of vaccinal etiology was made and the patient admitted to the hospital for treatment. Smears, cultures and scrapings were taken and animal inoculations carried out.

After admission to the Dooley Hospital, the only positive finding other than those of an ophthalmological nature, was a macular rash over the legs and

thighs which disappeared on pressure. Although the patient did not appear acutely ill, her temperature ranged from 101 to 105. Urinalysis was negative. Total white count was 18,100 with 61 per cent polymorphonuclears and 33 per cent lymphocytes. The red blood cells numbered 4,000,000 and the hemoglobin was 62 per cent. Wassermann and Kahn were negative.

Penicillin ointment containing 1,000 Oxford units



Photograph of patient.

to the gm. was placed in the left conjunctival sac lid and the eye kept clean with boric solution. Sulfadiazine with sodium bicarbonate was given by mouth. When, on the fourth day, the patient continued to run a febrile course not explained by the eye pathology alone, routine agglutinations were taken and reported positive in 1:640 dilution for tularemia. By this time the lower lid of the affected eye showed numerous ulcer craters and granulations.

A frankly purulent dacryocystitis with a draining fistula had also developed. Cultures were positive only for staphylococcus aureus but the rabbit which had received a subcutaneous injection of material from the eye lesion died. Autopsy failed to reveal any lesions characteristic of tularemia.

On November 15, the sulfa drug was discontinued and 15 cc. of antitularemic serum was administered intravenously. This was repeated on November 16 and the next day the patient's temperature dropped dramatically to 99.2. Agglutinations carried out at this time by the State Health Department were reported positive for *B. tularensis* in 1:1280 dilution. A rise to 101 was noted on succeeding days but by November 25, the child was afebrile.

By December 6, 1944, the conjunctival lesions had healed and the dacryocystitis had disappeared. On December 20, the patient was discharged as well. When seen in the eye clinic one month later, both eyes were normal.

#### DISCUSSION

In all cases of Parinaud's oculoglandular syndrome (granulomatous conjunctivitis with regional adenopathy) oculoglandular tularemia should be suspected. While other causes of Parinaud's conjunctivitis such as tuberculosis, lues, streptothricosis, leptotrichosis, sporotrichosis, rhinosporidiosis and vaccinia may give rise to an ocular lesion closely re-

sembling that of tularemia, these are but rarely associated with a severe systemic reaction. The differential diagnosis is easily made by animal inoculation and agglutination.

In this case it is highly unlikely that the antitularemic serum materially modified the course of the disease. At the time the serum was administered the disease had obviously reached its peak and had begun to abate. As would be expected, sulfadiazine was also ineffectual in controlling the disease. While the penicillin ointment was of no value in combating the lesions caused by *B. tularensis*, some improvement was noted in the appearance of the local lesions due, presumably, to the control of secondary invaders.

#### SUMMARY

A case of oculoglandular tularemia is reported. Oculoglandular tularemia should be suspected in all cases of granulomatous conjunctivitis accompanied by systemic reaction.

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#### The Alumni Association of the Medical College of Virginia, . .

At its annual meeting in Richmond on June 16th, elected the following officers for the coming year: President, Dr. Waverly R. Payne, Newport News; vice-presidents, Dr. R. J. Wilkinson, Huntington, W. Va.; Dr. R. R. Rooke, Richmond; Dr. J. J. Stigall, Jr., Richmond; and Mrs. Anne F. Mahoney, R.N., Richmond; secretary, Dr. W. Henry Street, Richmond; treasurer, Dr. Harvey B. Haag, Rich-

mond. Members of the Board of Trustees, elected for a term of three years each, are: Drs. Harry Lee Claud, Washington, D. C., C. C. Coleman and James H. Smith, Richmond; and George W. Schenck, Norfolk.

Dr. Roshier W. Miller of Richmond, presented a resolution recommending that the by-laws of the Association be amended to permit the election at the next annual meeting of a president-elect, and this was unanimously adopted.



## THE CHAPLAINCY AT THE MEDICAL COLLEGE OF VIRGINIA

THE REVEREND GEORGE OSSMAN, CHAPLAIN,  
Richmond.

A woman, prepared for operation, was being rolled through the hall when she saw the chaplain. She knew him for he had visited her many times during a long illness and a series of operations. She was going back to the operating room for an emergency. He recognized her and immediately went to her side. As he took her hand, she gripped it hard and reached for the cross, dangling on a chain around his neck. No word was said. He bowed his head in silent prayer for a moment or two. The patient with a lingering smile of thanks was moved on down the hall.

The presence of the hospital chaplain at the bedside of a patient in the Medical College of Virginia hospitals is now taken as much for granted as that of the doctor or nurse. He is a regular member of the staff. At the Massachusetts General Hospital in Boston, in the Institute of Pastoral Care, he has been trained in an understanding of the patients' needs and the doctors' desires. He is thoroughly familiar with hospital routine, even trained to do the work of an orderly in an emergency. His work at the Medical College is supported by the Interdenominational Religious Work Foundation of Virginia.

The hospital chaplain is also rector of the church next door. The Monumental Episcopal Church and the Medical College of Virginia have occupied the same block for over a hundred years. Funds have been supplied to make the church a connecting unit of the hospital, thus enabling wheel-chair patients to attend services, organ recitals, or to go in for a time of quiet and prayer. The church is built in the shape of an octagon. Inside the old edifice, the murals on the dome and the stained glass windows is a foreground for the sanctuary where a painting of the resurrection angel stands by the empty tomb. To the left, off on a distant hill, mutely stand the three crosses.

The chaplain's day begins at nine when he checks in to take care of his desk work. He must first get the new list of admittances of the previous day and night in order to decide whom to see. Next, he must check his mail and take care of communications with families of out-of-town patients and patients

who have left the hospital but want his advice. He then looks over his records. He keeps a record of every patient he sees in order to follow through each day with a constructive visit.

He looks over the work left by his assistants, the Reverend Ernest F. Hall, a retired Methodist minister, who requested training and now gives untiringly of his time, and the Reverend William W. Mankin, a Negro Baptist minister, who is studying pastoral care and giving his services to St. Philip Hospital, a unit of the College.

Phone calls come in from supervisors or nurses for him to see special patients. Students or hospital employees find him helpful and come to him freely for all sorts of advice.

At ten-thirty, the chaplain finally gets started on his rounds. First he sees the cases he considers most important and then routinely he goes from floor to floor. He can not see all; he tries to see those who he knows need him and always to check on those from out of town.

This morning he must see a young boy from the country who is being treated for brain tumor. He finds him very weak and nauseated. The chaplain knows how rushed the nurses are, so he holds the child's head, wipes his mouth, and puts in a call for a nurse. The boy sinks back on the pillow exhausted, opens his eyes and looks up, then with a wan smile whispers, "Oh, its you—thanks."

In the next room he talks at length with a woman who is dreadfully worried about her family at home and the expense of the hospital. He helps her think her problems through. When he leaves, she is not so wrought up, and he promises to see her again soon.

On another floor, a nurse comes to him to say that a patient he has seen before is dying. He goes right in and stays as long as the woman is conscious. Members of her family have been sent for, but they have a long way to come.

On the wards he must stay long enough to speak to everyone. Frequently he uncovers difficulties which when known can be alleviated by the medical social workers with whom he is in close touch.

He never feels that he has seen as many patients

as he would like, but his time is limited.

Whenever a patient is desirous of seeing a priest or rabbi of his own denomination the chaplain has an arrangement with clergymen in the city who will come when called. The chaplain tries to see all patients who want him regardless of race or creed.

On Wednesday afternoons a class of young men from the Presbyterian Seminary and a class of young women from The Assembly's Training School meet him for instruction in pastoral counseling. After lecturing, he sends them to see special patients and report to him. Every interview must be written out

in full and discussed for only thus can a visit be controlled sufficiently to be sure it is worth while and not just a casual social call.

As soon as he can get away from the hospital, he must be with his own congregation and take charge of the parish affairs of the church.

To some of us it is particularly striking to see in an airplane view of "Hospital Square" three buildings—the main hospital, the clinic, and the church—each one constructed in the shape of a cross, the symbol which has led so many of the pioneers in mental and physical healing.



The Chaplain's Church is in the foreground. Close to it is the Medical College of Virginia Hospital.

## THE PUBLIC HEALTH NURSE AND THE PRIVATE PHYSICIAN

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One of the more recent developments at the Medical College of Virginia is the public health nursing division of the school of nursing. The general objective of this division is to prepare graduate nurses for positions with public health agencies. If broken down into its last analysis it is to prepare nurses to be of service to individuals and families in the community and to their private physicians, in order that maximum health might be obtained by all. Such a program involves both nursing care and health education. This latter interpretation of the functions of the public health nurse is not always realized, nor is it generally known that the public health nurse is available for service for all in a community regardless of economic or social status. Just how this program of study prepares nurses to serve the general practitioner and his patients might better be understood if a few typical visits by the nurse were related.

Under the present war-time conditions, where there is a waiting list for hospital beds and a shortage of nurses, it is not unusual for patients to return home from the hospital well before the convalescent period. This is especially true with maternity patients, and fortunate is that community which has a health agency employing public health nurses who give bedside care. Such agencies are usually known as visiting nurse services, since their nurses remain in the home only long enough to give the major nursing care needed and to teach someone to care for the patient in their absence. These nurses average six to eight home visits a day.

A not unusual situation might be a five day postpartum mother who has returned home from the hospital. She is from the group of patients who would ordinarily have a private nurse, but none being available because of the heavy demands of the military, she is referred to the local visiting nurse service for a public health nurse to give her and the newborn infant a daily bath. For this service she will pay a specified fee. Before visiting the family, the nurse gets in touch with the private physician to learn of the condition of the patient and to get his personal orders for care. She then goes to the home

and carries them out. While there, through general conversation she finds what the family already knows, and according to needs she teaches the attendant and the mother how to bathe the infant and how to give the mother and baby care in between her visits. She discusses the diet of the mother, and especially diet in relation to breast feeding if the baby is on the breast. If the baby is on a formula she emphasizes the importance of keeping him constantly under the physician's supervision, both now and in the future, rather than following advice given in books or by neighbors, since each baby is different and needs individual care.

While a given patient affords the nurse an entrée into the home, once she has established a good relationship she becomes interested in the health of all and the effect of the health of each on the family as a whole. So in the above situation, during the course of her visits the nurse would inquire if the preschool children, if any, had been immunized against any of the childhood diseases. If not, this gives her the opportunity to explain that medical science has discovered various agents that will safely protect individuals against certain of the communicable diseases. She then encourages the mother, when she is strong enough, to discuss this with her physician, and to follow his advice in this respect regarding the infant and other children in the family, should they not already be protected.

A nurse who develops good rapport in a home and gives satisfactory nursing care invariably is referred to other patients. These may not be maternity cases, but they might be diabetics, advanced cancer cases, or any patient in need of nursing care.<sup>1</sup> They may or may not be able to pay the usual fee, but in either case the care will be the same, since the budget of such agencies is supplemented by the community fund or some other philanthropic source.

Regardless of the physical condition or by whom the patient is reported, the nurse first contacts the family physician to get his diagnosis and his special orders for the care which he desires the individual to have.

With the diabetic the nurse has an excellent op-



portunity for teaching. Not only does she teach the patient the care of the insulin, if ordered, and demonstrates how to give it, and teaches how to plan the day's diet from the foods allowed, and how to weigh and measure the food, but she also teaches the importance of personal hygiene, the avoidance of infection, and the need for constant supervision by the physician.

If the diagnosis is advanced carcinoma, the nurse will have an opportunity to practice her art of nursing, for she realizes that good care can do much to enhance the effects of the medication given to relieve the physical discomfort. If there is an open wound, the nurse will demonstrate the care of the patient and how to sterilize the necessary dressings in the home.

Situations of this kind give the nurse an excellent opportunity to teach the family and others the urgency of reporting early to their physician any unusual discharge or growth, the difference between surgery and the biopsy, and the importance of returning to the doctor as directed. She emphasizes the importance of returning until a definite diagnosis is made, the condition treated, and the periodic follow-up examinations assure the physician the condition will not return.

The above are but a few of the ways in which the public health nurse works in close cooperation with the general practitioner for the good of his practice.<sup>2,3,4</sup> But this relationship of patient, physician and nurse is not limited to the public health nurse carrying a bedside program; every nurse, whether a member of a staff connected with a department of health, a department of education or with an industry, appreciates that the closer she works with the family physician the more successful she will be in her profession.

The relationship of the department of health nurse and the family physician<sup>4</sup> is generally not so clear cut as it is with the visiting nurse. In fact, there are some who erroneously think that the nurse with the official agency works independently of the physician. This is due to several reasons, one being the fact that most public health nurses in official agencies are administratively under the guidance of the health officer, who is himself a physician. This is true as far as the administration of the program goes, but the fact is that many official agencies do insist that their nurses contact the family physician before making any visit, even though it be just to

give advice to a young mother regarding the care of the infant.

Another cause for misinterpretation is that many indigent patients who do not have a private physician are registered with certain clinics, such as the child welfare conference or the syphilology clinic where they are under the supervision of the clinician, who is also a physician.

A third misleading factor is the standing orders which most agencies have.<sup>4</sup> This is a list of orders for emergency care for patients suffering from specified conditions; these are drawn up by a group of physicians and approved by the local medical association. They might also include general advice regarding the hygiene of pregnancy or the nutrition of the infant and preschool child. But these are to be used only where there is no family physician, for it is recognized that the needs of no two patients are exactly alike and that often physicians differ in their preferences regarding care.

The public health nurse not only does not work independently of the physician, but many times she is in a position to increase his practice. The care and instruction which she gives is not limited to the particular patient who takes her into the home, for she eventually becomes interested in the health of all the other members of the family. Although the nurse never makes a diagnosis, because of her knowledge of health and disease she recognizes symptoms which might lead to illness. When this occurs she urges the individual to consult his physician, and discusses with him the condition which should be brought to the attention of the physician in order to aid him to make a diagnosis and advise treatment.

While the nurse with the department of health, as with the private agency, is interested in getting individuals under the supervision of the physician when physical conditions suggest such care, she is equally anxious to assist him with his patients. Even though her program does not include continuous bedside care, she uses the demonstration as a teaching method. Any physician may request the nurse to visit the home of a patient to demonstrate to the family isolation technique in order to erect a barrier around the patient with a communicable disease and prevent the specific organism from spreading to the attendant, the family and the community. The entrée into the home gives her a chance to discuss with the family the importance of health

supervision following recovery, and if indicated the value of immunization for those diseases for which there is proved immunity. In such conferences the nurse has in mind the prevention of disease, and the emphasis is on positive health rather than on morbid conditions. Some physicians fear the annual physical examination will make hypochondriacs of their patients, whereas if approached from the positive angle it is one of the most efficient tools which we have for maintaining health at a high level.

The nurse can also help the physician with his syphilis patients, both with case holding and case finding. If requested, the public health nurse will visit these individuals and explain to them the nature of the disease, the danger of contagion and congenital syphilis, and the complications due to insufficient treatment. Many of these patients when approached in an objective manner by a nurse, who can inspire confidence by her sincerity and her experience in interviewing, will either be responsible for having their contacts examined or will request the nurse to talk with them. Naturally the nurse will assure the patient that his confidence will in no way be betrayed.

It is not difficult to understand the value of the school nurse and her relationship with the general practitioner, since the main objective of the school health program is the conservation and the promotion of the health of every school child. This is done by developing within the child a knowledge of normal health, and favorable health attitudes and practice.

One means to this end is the health inventory which many agree is more satisfactory when done by the family physician who is as much interested in preventing defects as in finding and correcting them.<sup>5</sup> Whether this inventory is made by the family doctor or the school physician the nurse interprets the findings and recommendations to the parents and the child and aids them in making plans to have these conditions corrected.

Of far more value, however, than the correction of defects, as important as that is, is the acquiring of health knowledge and the development of health attitudes. With this will come an appreciation of the family physician not only as one to be sought when deviations from normal appear, but one who is to be visited periodically for the health examination in order to prevent illness. In other words, the young child in the school gradually develops

throughout the years an appreciation of the preventive aspect of medical care, and the nurse has a vital part in this program.

When the school, the nurse and the family physician combine their efforts to develop within the child this desire for maximum health, including the correction of defects, we will not find 50 per cent of our youths ineligible for military service as happened with the first 2,000,000 young men examined for selective service during the early years of the present war.

The industrial nurse, like other public health nurses, is interested in the prevention of illness; how else can she keep the employee on the job. It is true most industries do employ their own physicians, but their chief interest is in the industrial life of the employee which covers only about one-third of his time. During the other two-thirds of the day his health is greatly affected by environmental influences, family relations, personal hygiene, nutrition, and physical ailments not related to the industrial process. Any or all of these might lead to conditions needing medical supervision. The alert nurse sees behind the frequent headache, the disordered stomach and similar ailments the possibility of much more than the complaint itself and begins to question the individual. Probably improvement in personal hygiene might be all that is needed, but on the other hand medical attention is often indicated and the individual is referred to his personal physician for this purpose. Furthermore, it is not unusual for an employee to consult the nurse about the health problems of members of his family and a careful analysis of the situation frequently leads her to urge the individual to seek medical advice.

Today we are realizing more and more that there are not two types of medical care, namely preventive and curative medicine, but that each is an aspect of the same and cannot be separated. Because of this, experiments are in operation in several of the larger centers where the health program of the official and non-official agencies are being combined under the department of health and bedside nursing is being included as one of the functions of the staff nurse of that agency.<sup>6</sup>

According to Dr. Joseph W. Mountain,<sup>7</sup> Assistant Surgeon General of the U. S. Public Health Service, at present the health of only about two-thirds of the local communities is protected by organized departments of health, and plans are now being made so

that after hostilities cease public health will be re-organized on a national scale in order to protect the health of all the people in the United States. This will mean an increase of from 50 per cent to 75 per cent over the 19,821 active public health nurses now employed in this country if we are to meet the minimum requirement of one public health nurse to every 2,000 population. It is to assist with the preparation of these needed nurses for positions with the visiting nurse association, the department of health, the school and industry, or for the department of health, which includes both school and bedside nursing with other services of its program, that the Medical College of Virginia has established its program of study in public health nursing. This program of study provides all the courses required in the major for public health nursing and leads to the B.S. degree in Nursing Education.<sup>8</sup> The above functions of the nurse reflect the philosophy of the program which is integrated throughout the various courses, and every effort is made to strengthen the relationship of the nurse, patient, family and the general practitioner.

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### Penicillin Therapy of Venereal Disease.

The following statement to the VIRGINIA MEDICAL MONTHLY from Major Kenneth N. Byrne, M.C., Class of '37, M. C. V., now located at Camp Pickett, is of interest:

My new duties at the Convalescent Hospital in Camp Pickett find me as head of the section of Physical Medicine.

Were it not for the red tape of having all medical papers approved one could take more interest in relating medical experiences. As it is few of us attempt to publish anything.

One point which I've seen which may be of great importance in penicillin therapy of venereal disease is that in treating successfully a case of gonorrhea the dosage of penicillin served to mask and suppress a syphilitic exposure without curing it, so that a latent case of syphilis may occur without any apparent primary lesion. I have known of two cases of such latent syphilis picked up only after the development of a secondary rash. With penicillin being available for general civilian use, a warning as to this serious complication should be publicized.



## THEORY AND PRACTICE IN THE PREPARATION OF NURSES

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In discussions of the Steering Committee of the Curriculum Research Project, being carried on in the schools of nursing, associated with the Medical College of Virginia, attention has focused on the general curriculum set-up, involving the relative importance of theory and practice in the training program. The acceleration due to the war has intensified the issue. If theory can be correlated with practice all the way along the educational route, it is obvious that time may be saved and acceleration continued. This means, to be sure, that no valuable educational outcomes shall be sacrificed in the process.

Preparation for intelligent nursing involves knowledge and information, skills, trait development, personality enrichment, and an encouraged interest in the profession. If these several phases of growth and development may be cared for simultaneously, so much the better. The concept, "We learn to do by doing," has long been advanced by educators as a more efficient method of learning. It has been stressed particularly in connection with purely theoretical courses, not closely correlated with everyday life and behavior. Laboratory courses in the arts and sciences have been designed especially to take care of desirable correlation, which seems to be missing too often in non-laboratory courses.

In the preparation of teachers, the need for a closer integration of theory and practice has long been evident, and has not yet been satisfactorily solved. In nursing education, the service requirements of students have, generally, more than taken care of needed practice, to make the theory courses more meaningful. The question now becomes, "Has practice in nursing education gone too far, and usurped part of the time which should be given to theory?" "Can the nurse collect sufficient knowledge and information—important outcomes of theory courses—while engaged in activities associated with practice?"

In order to assist the committee in thinking through the problems of theory and practice, a questionnaire was prepared and sent out to a sampling of nursing schools, 176 in number, situated in different sections of the country. The following dis-

cussion is based on returns from 90 schools. The summary of replies and the questionnaire items are omitted to save space.

## DISCUSSION

Fifty-two replies indicated a consensus of opinion against continued acceleration of training after the war. The twenty-seven who thought acceleration had proved its value are in the minority. It would be interesting to know why they thought this way. Perhaps they belong to a group believing primarily in the virtue of "learning by doing" and that nurses need experience rather than theory courses. Perhaps, also, they believe that people waste much time which might be utilized in speeding up the process of training.

The fact, that 70 did not favor substituting practice while learning for most theory courses, indicates, however, that the majority are in favor of emphasizing theory at least as strongly as it has been emphasized in the past. Only 10 expressed themselves in favor of increasing practice while learning, at the expense of theory courses.

However, only 12 favored more theory, while 71 opposed it.

An internship period, after theory courses are completed, was favored by forty-two schools, with thirty-two opposed. This indicates a desire that less attention be given to service work by students in preparation, which is substantiated by the replies of 45, indicating that student nurses have too varied a program at one time. Forty-two indicate their partiality for concentration on theory, alternated with concentration on practice, in order to relieve the strain and inefficiency involved when they are not differentiated.

Fifty-three favored fewer and more comprehensive courses. Even more favored practice, during training, only for its educative values. An almost unanimous opinion expressed the belief that knowledge and information are as important as skill and art.

There was almost unanimous agreement that nursing education should have as its aim the development of a functional personality, rather than the mere teaching of fixed skills and techniques. This

is important in planning an educational program. It is not so difficult to teach fixed skills and techniques. It is quite a different thing to develop a functional personality prepared to tackle and solve the many different problems which confront her.

The concept of study guides and work books for nurses was accepted by about two-thirds of the group. This is especially important if the nurses are expected to do more and better studying; and instructors haven't sufficient time to consult with each student separately. One respondent referred to the study guide and work book as a childish concept. But it is fairly obvious to experienced instructors that students in college do not always know how to study. This is particularly true when the instructor is vague as to assignments and makes no attempt to direct study. Professional educators are fairly well agreed that instructing, as a function, is primarily one of motivating and directing study by the students.

A majority of respondents agreed that nursing education was no longer to be considered as supervised apprenticeship, although 33 still thought of it favorably as such. Nurses have now reached the stage where they regard an apprenticeship preparation insufficient to produce functioning personalities on a professional level. If the nurse is to be given charge of ill patients and called upon to solve many of the physical, psychological, and social problems which arise, she should have a superior preparation.

Sixty-six of 88 believed that service requirements should not interfere with theoretical education. This is important and implies that the staff of regular nurses in the training hospital should be large enough to care for all patients in the regular course of events. It does not preclude the possibility of having much useful work done by students in training—only that education should be primary, and service work undertaken for its educative values.

Seventy-six thought that achievement should be evaluated without being tied in too intimately with time spent. It seems obvious that some nurses are much more efficient than others, although their time period for preparation might have been much shorter. The implications here are that provisions should be made, in the preparation of nurses, for individual differences in aptitude and native ability. Perhaps the wisest sort of provision would be one of special enrichment, or special opportunity, for the most able.

Seventy-two stressed the need for more study by

student nurses. This is a problem in every type of educational institution. In the opinions of instructors, students do not read widely enough. Nor do they study the textbooks with enough concentration to acquire desirable amounts of information to stimulate thought.

Seventy agreed that instructors should be free for their primary function of instruction—that service duties should not hinder them in the instructional function. This implies that a sufficiently large service staff should be available to care for all patients in an emergency; but does not preclude valuable service work by instructors.

Eighty-three believed that instruction is best tied up with service. Under the circumstances, it is to be inferred that there is almost unanimous opinion that theory without practice and practice without real service, are undesirable. Instruction is fundamental; practice is a necessary part of instruction; and practice should be real—not make-believe.

Forty-five were of the opinion that present practice unduly emphasizes service, but 38 would not admit it. The controversy is resolved by having a sufficiently large personnel of regular service nurses to make unnecessary too great dependence upon students, or instructors, for the performance of purely service duties.

In summary, there is not a demand for more theory; nor for more practice; nor for a longer period of preparation; nor for more formal instruction; nor for more speeding-up of the preparation. There is some demand for less service requirements; and distinct demands for more leisure time; for better lesson assignments; for more student study; more informal instruction; and more use of educational films. There is also a demand for simplifying the curriculum by combining courses and preventing overlapping; for unifying and integrating duties of student nurses; for using student service primarily for instructional purposes; for personality development as an objective; and for better guidance of student study.

In interpreting this study it is well to remember that it is a judgment study involving replies of directors of 90 hospital and collegiate schools of nursing. When better evaluations of nursing and nursing education are possible, we may draw conclusions of a more valid and reliable nature. In the meantime, we must depend largely upon judgments of experienced nurses and nurse educators.

## PUBLIC HEALTH

I. C. RIGGIN, M. D.,

*State Health Commissioner of Virginia.***Trend of Typhoid Fever in Virginia During the Past Three Decades.**

One of the most spectacular conquests over disease is that against typhoid fever. This result has been due to the ability of science to apply its attack on a mass basis through the development of safe water supplies in cities and towns and the establishment of safe sewage disposal facilities for such communities. To this overall plan must be added the marked advances that have been made, through

acceptance of this term, no longer exists in Virginia.

Note the marked decline in both white and colored mortality rates during the 30-year period. Decrease in the white rate from 1914 to 1944 was 99 per cent; in colored rate, 98 per cent. Note, also, that the colored rate in 1914 was about 40 per cent higher than the white; in 1944, was slightly more than twice the white rate. There were 4,610 reported cases of typhoid fever in the State in 1914 and 127 cases in 1944.

TYPHOID FEVER MORTALITY WITH NUMBER OF CASES BY TEN-YEAR PERIODS  
VIRGINIA, 1914-1944

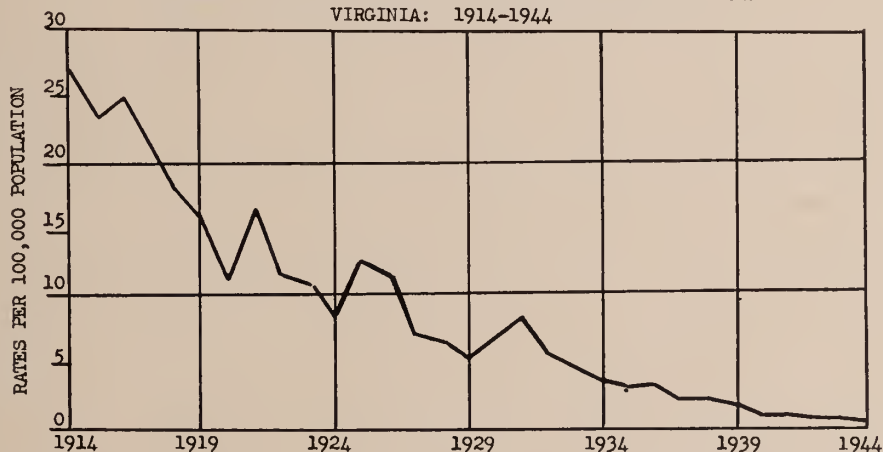
## DEATHS

	TOTAL		WHITE		COLORED		CASES
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	TOTAL NUMBER
1914	586	27.0	337	22.6	249	36.6	4,610
1924	205	8.7	123	7.3	82	12.2	1,510
1934	93	3.7	52	2.8	41	6.3	755
1944	11	0.4	6	0.3	5	0.7	127

public health activities, in inspiring the installation and proper maintenance of private water supplies and sewage disposal equipment in rural areas, and the application of immunizations. Through these measures the great typhoid fever toll formerly at-

tributed to the private well or spring has been reduced to a minimum. Indeed, except for the sporadic case, due to negligent private environmental sanitation, the imported case and that of carrier origin, the typhoid fever problem, in the former

TREND OF MORTALITY FROM TYPHOID AND PARATYPHOID FEVER  
VIRGINIA: 1914-1944



tributed to the private well or spring has been reduced to a minimum. Indeed, except for the sporadic case, due to negligent private environmental sanitation, the imported case and that of carrier origin, the typhoid fever problem, in the former

Of the 127 cases in 1944, 8 were reported under 5 years of age; 19 cases from 5 to 9 years; 20 from 10 to 14 years; 11 from 15 to 19 years; 44 from 20 to 39 years; 13 from 40 to 59 years; 6 were over 60 years, and 6 were unknown as to age.



In other words, slightly less than three-fourths of the deaths, and a little over one-half of the cases occurred past 20 years of age.

In 1944 one death occurred during the first quarter of the year; 1 during the second quarter; 5 in the third quarter; and 4 in the last quarter.

Among cases for the same year, 17 occurred in the first quarter; 33 in the second; 48 in the third; and 29 in the fourth quarter of the year.

The graph above shows a precipitate downward trend for typhoid fever mortality in the State from 1914 to 1920. Following this period until 1932, a less rapid decline with considerable fluctuation is

noted. Beginning with 1933, a consistent, downward movement maintains until 1944, when a new low record was reached.

The rural physician can supplement greatly the public health activities directed to reducing further the individual environmental hazards of those living outside communities on farms or small places, by offering advice and counsel to those with whom he comes in direct professional contact. This teamwork between the family physician and the public health officials always has been noted, but an even greater emphasis would be of value in decreasing what remains of the typhoid fever hazard.

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## CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

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This case (code no. 160-C) is that of a 36 year old colored woman, gravida 8, para 7, who was admitted to the hospital August 28, 1941. She was about 8 months pregnant and showed signs of congestive heart failure. There had been no prenatal care. During the preceding week she had been suffering with attacks of dyspnoea, which had gradually become more distressing. Examination revealed a middle age colored female drowsy and short of breath. The blood pressure was 170/130, temperature 99, pulse 120 and respiration 38. The heart was enlarged, the lower extremities oedematous, and moist rales filled the chest. Urinalysis showed 4 plus albumin with hyaline and granular casts.

She was placed in an oxygen tent and morphine gr.  $\frac{1}{4}$  with atropine gr. 1/150 were given. She also received a capsule of ephedrine and nembutal which was to be repeated three times a day. Her progress under this treatment is not stated, but five days later (September 3, 1941) an attempt was made to induce labor by the insertion of a bag. This attempt was unsuccessful and medical induction was started, which consisted of Pitocin  $\frac{1}{4}$  cc. every half hour for 8 doses and quinine gr. 10 every three hours for 4 doses. The patient subsequently went into labor and delivered a stillborn child (wt. 5 pounds 2 ounces) at midnight September 4, 1941.

The following morning the patient was still short of breath and 20 drops of digitalis were given and

repeated a few hours later. On midnight of the first post partum day, 2 cc. of 50 per cent magnesium sulphate were given for restlessness. From that time on her progress was down hill until she died at 2:00 P. M. September 10, 1941. During this period caffeine, strychnine, morphine, atropine and glucose solution were occasionally given.

No autopsy was performed, nor is there any record of blood pressure readings after the original examination.

### COMMENT

This case is considered to be a preventable death. In cases of circulatory failure the first object to be attained is cardiac compensation. Whenever possible the obstetrician should associate himself with a competent cardiologist and a combined line of treatment agreed upon. Certainly this patient should have received rest and digitalization before any attempt was made to deliver her. It would probably have been best to wait until the ninth month. Certainly the use of a bag for induction is to be condemned and the method of induction which was finally used, is questionable.

There is every reason to believe that had this patient received proper prenatal care, in combination with more conservative management after her admittance to the hospital, a very different outcome would have resulted.

**WOMAN'S AUXILIARY**  
to the  
**MEDICAL SOCIETY OF VIRGINIA**

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*President*.....MRS. PAUL C. PEARSON, Aylett  
*President-Elect*.....MRS. P. M. CHICHESTER, Abingdon  
*Recording Secretary*.....MRS. C. C. SMITH, Norfolk  
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*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond  
*Chairman, Press and Publicity*.....MRS. A. G. SHETTER,  
 Richmond.

### Auxiliary Board Meeting.

Owing to a ruling of the Office of Defense Transportation, the auxiliary will be unable to hold its annual meeting in October. However, as many matters of interest always arise for discussion, it has been decided to have a board meeting of the Auxiliary to the Medical Society of Virginia in Richmond, in October. Exact date and time will be announced later in the MONTHLY.

VIRGINIA M. PEARSON,  
 (MRS. PAUL C. PEARSON),  
*President.*

### Norfolk County Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society met May 21, at 8 P. M. at the home of the President, Mrs. Southgate Leigh, Jr., following a short meeting of the Executive Committee.

As there had been no reports from the Standing Committees at the Executive Committee meeting the President asked for a motion to omit calling for these reports.

The Nominating Committee made a report, presenting the slate of officers to be voted on at the next meeting.

The President announced that since the state and national meetings would not be held this fall no delegates would be elected. The Treasurer reported,

however, that we had 81 paid-up members.

The Secretary read a form letter from the Treasury Department, asking that our organization participate in the Seventh War Loan. She also reported that a letter had been received from the Director of the Port of the Hampton Roads Area asking that we observe Wartime National Foreign Trade Week, May 20-26, and especially National Maritime Day, May 22.

Mrs. Leigh read a letter from the State President, Mrs. Pearson, thanking us for our hospitality to her at our recent luncheon meeting.

The resignation of Mrs. William Lett Harris was then read. It was voted to accept her resignation with regret. Mrs. H. W. Rogers was appointed to fill the unexpired term of Mrs. Harris as Chairman of the Revisions Committee.

Next, the meeting was turned over to the Parliamentarian, Mrs. C. C. Smith, who read the recent changes in and additions to the Constitution of the Auxiliary to the Medical Society of Virginia and moved that we change our Constitution wherever advisable to conform to the revised State Constitution. This motion was carried and the President appointed Mrs. Smith and Mrs. H. W. Rogers to work on this matter.

There being no further business the meeting adjourned.

We were soon joined by the Norfolk County Medical Society and Dr. and Mrs. Leigh were hosts at a delightfully informal reception. Mrs. Southgate Leigh, Sr., received with them.

KATHERINE B. SALLEY,  
 (MRS. W. C. SALLEY),  
*Chairman, Press and Publicity.*

### Pro Golfers Association Helps Army Convalescents.

The Professional Golfers Association has been actively cooperating with the Army's reconditioning program. Through its regional groups it has arranged for local golf clubs to offer patients from nearby Army hospitals free instruction and playing

privileges and to lend them equipment. It has provided high quality exhibition matches for convalescent patients, has built and donated golf courses at several general hospitals and provided putting greens and driving ranges at others. Eventually the PGA hopes to expand this program to all general hospitals suitably located for golfing.

# VIRGINIA MEDICAL MONTHLY

*Official Publication of the Medical Society of Virginia*

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,  
*Editor Emeritus*

M. PIERCE RUCKER, M. D.,  
*Editor*

AGNES V. EDWARDS  
*Business Manager*

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond 19, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, \$2.00. Single copies 25c.

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### The Medical College of Virginia Issue

THE first Medical College of Virginia issue of the VIRGINIA MEDICAL MONTHLY appeared in March, 1944. This is Number 2 in a series which the College hopes the publication committee will continue indefinitely.

An effort has been made in selecting the papers to be published to have as many departments of the College as possible represented. The articles which have had to be held over will be published in future issues.

The acting editor is most appreciative of the cooperative spirit shown by every one who had a part in making this issue possible. Dr. Rucker has given him complete editing freedom and Miss Edwards' assistance throughout has been invaluable.

SIDNEY S. NEGUS.

### The Baruch Center of Physical Medicine

IN the spring of 1944, Mr. Bernard M. Baruch made a gift of \$250,000 to the Medical College of Virginia to be expended in ten years in establishing a center for teaching and research in physical medicine, with particular reference to hydrology, climatology, and spa therapy. Since the ultimate purpose of research and education in any branch of medicine is to improve service to the sick, the initial major responsibility of the Baruch Center of Physical Medicine was the provision of an adequate clinical program. Accordingly, the physical therapy departments of the Medical College of Virginia Hospital and St. Philip Hospital were re-designed for more efficient service and were equipped and staffed for the practice of all branches of modern physical medicine. It was assumed that once such a Center had come into being, it might serve as the outlet for advances in human knowledge emanating from its affiliated basic and clinical research laboratories. Thus the whole program of the Center has been created to stem from the fundamental needs of the sick, the handicapped and the injured.

The Center is composed of a cross-departmental staff loosely knit on the institute plan. Its members, which now number fourteen, represent three fields: the basic sciences, clinical medicine, and the technical aspects of physical and occupational therapy. No major staff member serves a single function. All participate in various



proportion to each phase of the Center's interlocked program of education, research, and service to the sick.

The administrative office, research laboratories, and shop of the Baruch Center are housed in the north wing of the fifth floor of the Clinic Building. The clinical facilities, already described, should soon permit the treatment of 40 to 50 hospitalized or ambulatory patients per day in the Medical College of Virginia Hospital and 30 to 40 at St. Philip Hospital. When alterations in the physical plant have been completed and all equipment has been installed, a parallel program may be anticipated in the white and Negro hospitals.

F. A. HELLEBRANDT,  
*Acting Director.*

### PRESIDENT'S MESSAGE

**F**OLLOWING up the brief notice in the last VIRGINIA MEDICAL MONTHLY with reference to our meeting in Roanoke on October 22nd and 23rd, the majority of Councilors felt that it would be preferable to have the House of Delegates represented, and with all the important developments in the medical world today, I felt very strongly that we should have as many representatives as possible present. Therefore, it was decided to have a so-called "streamlined" meeting of the House of Delegates. In order that this may be legal, we have advised each component society to elect the usual number of delegates but to send only one to the meeting. Wherever possible, the member of the Council in his particular district should represent his component society.

Several weeks ago, your Committee on Clinical and Medical Education held a meeting in Richmond. We invited Lt. Col. Staige D. Blackford, who is back on leave from the Italian theatre, to attend this meeting in order that we might have his views as a representative of the medical officers in the service. Colonel Blackford has talked to a great many of these officers with reference to this problem and he has been much interested in it. As a result of this meeting, it was decided to appoint a returned medical veteran to assist the Committee as contact man with the returning veterans. We thought that this would lend a much more sympathetic tone to the Committee and its work with these men. Dr. Andrew D. Hart, Jr., has recently received a medical discharge from the Army Medical Corps and, as he is located in Charlottesville, where the Executive Secretary has collected a large amount of material for the use of our Committee, it was thought that he might be a logical man for the position. He willingly accepted the appointment and he is being given secretarial assistance, in order that the necessary transition may be carried out. It was thought to be important that rather immediate contact be made with each member in the Armed Services, telling them about our ideas and trying to obtain theirs. Further reports, of course, will be made as the situation develops.

You have no doubt seen that the Wagner-Dingle-Murray Bill has been reintroduced into Congress, and I suggest that each one of you acquaint himself with the medical aspects of this bill. It will be analyzed for you after a sufficient time has elapsed to study this measure.

The problem of rural medical care continues to engage the activities of the members of your Committee on Public Relations and Medical Care. A recent series of public hearings showed conclusively that the rural people are considerably stirred about this problem and it demands a solution. It is to be hoped that some concrete measures may be presented to the next Legislature with reference to this matter.

H. B. MULHOLLAND,  
*President.*

## Societies

### The Fauquier County Medical Society,

At a meeting on June 14th, elected the following officers for the coming year, beginning July 1st: President, Dr. V. L. McCullers, Remington; vice-presidents, Drs. H. L. Townsend, Marshall, and W. G. Trow, Warrenton; and secretary-treasurer, Dr. J. Frank Folk (re-elected), Warrenton.

At this meeting the Society also named its delegate and alternate to the House of Delegates meeting of the State Society, and Dr. M. B. Hiden of Warrenton gave an interesting talk on the Stader splints in fracture work.

### Buchanan-Dickenson County Medical Society.

This Society which meets on the third Wednesday night each month, had a regular meeting on May 16th at Grundy Hospital. After supper and a business session, Capt. Joshua P. Sutherland, M.C., of Haysi, one of the members who was liberated from Bad Orb on April 2nd, gave an account of what it is to be a German prisoner of war.

Dr. J. C. Trivett of Page and Dr. T. C. Sutherland of Haysi are president and secretary, respectively.

## News

### Medical College of Virginia Commencement.

Commencement exercises for the 108th session of the Medical College of Virginia were held at the Mosque Theatre on June 16th at 8:00 p.m. Honorable Clarence Watson Meadows, Governor of West Virginia, gave the address of the evening. At this time, the College conferred the honorary degree of Doctor of Humane Letters upon Dr. F. W. Boatwright, president of the University of Richmond.

The graduates this year totaled 177, there being 93 in medicine; 37 in dentistry; three in pharmacy; 42 in nursing; 1 bachelor of science in nursing; and one master of science in biochemistry. Graduates in medicine with hospital appointments are:

MEDICAL COLLEGE OF VIRGINIA HOSPITAL, Richmond—Drs. Kenneth Dale Bailey, Clarksburg, W. Va.; Cecil Cooper Bell, Jr., Lynchburg; Joseph Alston Boyd, Jr., Atkinson, N. C.; Esther Clark Brown, Salem; William Mark Bruch, Bluefield, W. Va.; George Allyn Chapman, Shenandoah Caverns; Belle DeCormis Fears, Accomac; Edward Graham Field, Nuttall; Owen Gwathmey, Beulahville; George Southey Hankins, Newport News; Catherine Bird Hoover, Richmond; William Harvey Hufstetler, Jr., Haw River, N. C.; George Robert Jones, Jacksonville, Fla.; Ernest Waddill Larkin, Jr., Washington, N. C.; Unity Fern Monger, Harrisonburg; DeArmond Moore, Charlotte, N. C.; Herman Meyer Nachman, Middleburg; William Hanna Tal-

bot, Shelbyville, Ky.; George Franklin West, Camden, S. C.; and Charlie Francis Wingo, Richmond.

STUART CIRCLE HOSPITAL, Richmond—Dr. William Edgar Copeland, Huntington, W. Va.

JOHNSTON-WILLIS HOSPITAL, Richmond—Dr. Thomas Emmett Smith, Hayes Store.

CHESAPEAKE & OHIO HOSPITAL, Clifton Forge—Dr. John Wallace Compton, Jr., Ronceverte, W. Va.

NORFOLK GENERAL HOSPITAL, Norfolk—Dr. Mac Johnson Hough, Salem.

UNIVERSITY OF VIRGINIA HOSPITAL, Charlottesville—Dr. Augustus Alexander McLean, Jr., Lenoir, N. C.

DEPAUL HOSPITAL, Norfolk—Drs. James Terrell May, Jr., and Madge Dunn May, both of Richmond.

LEWIS-GALE HOSPITAL, Roanoke—Dr. Roy Burton Sampson, Jr., Beckley, W. Va.

ELIZABETH BUXTON HOSPITAL, Newport News—Dr. Stanley Wise White, Odd.

ST. LOUIS CITY HOSPITAL, St. Louis, Mo.—Drs. John Raymond Beem, Richmond; Roberta Hall Benchea, Weston, W. Va., and Charles Robinson, Richmond.

MASSACHUSETTS MEMORIAL HOSPITALS, Boston—Dr. Edward Hatcher Alderman, Four Oaks, N. C.

PETER BENT BRIGHAM HOSPITAL, Boston—Dr. Paul Ward Robinett, Huntington, W. Va.

QUEENS GENERAL HOSPITAL, Jamaica, L. I.,

N. Y.—Dr. Baruj Benacerraf, New York, N. Y.  
KINGS COUNTY HOSPITAL, Brooklyn, N. Y.—Drs. Leonard James Flohr, Huntington, W. Va., and John Milton Lukeman, Richmond.

HARLEM HOSPITAL, New York, N. Y.—Dr. Martin Freundlich, New York, N. Y.

NEW YORK CITY HOSPITAL, New York, N. Y.—Drs. John Harvey Nicholson, Statesville, N. C., and Frederick Brunell Spencer, Jr., Salisbury, N. C.

UNIVERSITY HOSPITAL, Baltimore, Md.—Dr. Reece Richard Boone, Jr., Smithers, W. Va.

FRANKLIN SQUARE HOSPITAL, Baltimore, Md.—Dr. Lois Fox Fryer, Bridgeport, W. Va.

CHARLESTON GENERAL HOSPITAL, Charleston, W. Va.—Drs. Walter Edward Bundy, Jr., Oak Hill, W. Va.; Alfred Joseph, Whitesville, W. Va.; and Elliot Moses Namay, Charleston, W. Va.

OHIO VALLEY GENERAL HOSPITAL, Wheeling, W. Va.—Drs. Paul Spiro Gotses, Fairmont, W. Va.; and William Harry Robison, Morgantown, W. Va.

ST. MARY'S HOSPITAL, Huntington, W. Va.—Dr. George Douglas Hayden, Huntington, W. Va.

CHESAPEAKE & OHIO HOSPITAL, Huntington, W. Va.—Dr. John Franklin Sinnett, Superior, W. Va.

REX HOSPITAL, Raleigh, N. C.—Drs. James Lyle Dellinger, Clifton Forge; John Talbert King, Burlington, N. C.; and Robert Hammond Sease, Richmond.

CITY HOSPITAL, Winston-Salem, N. C.—Dr. Marvin Worth Phillips, Asheboro, N. C.

BARONESS ERLANGER HOSPITAL, Chattanooga, Tenn.—Drs. Walter Scott Gilmer, Richmond; and George Andrew Zirkle, Jr., Danville.

CINCINNATI GENERAL HOSPITAL, Cincinnati, Ohio—Dr. Donald Leroy Greever, Woodville, Ohio.

STATE OF WISCONSIN GENERAL HOSPITAL, Madison, Wisc.—Drs. Grover Cleveland Honeycutt, Jr., Big Stone Gap; and Ben Thomas Painter, Williamsburg.

DOCTORS HOSPITAL, Washington, D. C.—Drs. Thomas Gray Hurdle, Roanoke; and Robert Ray Rector, Lexington.

GALLINGER MUNICIPAL HOSPITAL, Washington, D. C.—Drs. Clara Mae Iseley, Huntington, W. Va.; and Nancy King Wade, Surry.

ST. FRANCIS HOSPITAL, Pittsburgh, Pr.—Drs. Edwin Julian Kamons, Parkersburg, W. Va.; Franklin William Mallamo, Fairmont, W. Va.; and Albert James Paine, Atlanta, Ga.

PHILADELPHIA GENERAL HOSPITAL, Philadelphia,

Pa.—Dr. Herbert Gaines Langford, Jr., Columbia, S. C.

PENNSYLVANIA HOSPITAL, Philadelphia, Pa.—Dr. Lockert Bemiss Mason, Richmond.

PRESBYTERIAN HOSPITAL, Philadelphia, Pa.—Dr. Robert LaRue Parsons, Belle Vernon, Pa.

SOUTHERN BAPTIST HOSPITAL, New Orleans, La.—Drs. William Graham Painter, Big Stone Gap; and Earl Edward Wilkison, Parkersburg, W. Va.

BAYAMON CHARITY DISTRICT HOSPITAL, Bayamon, P. R., and SCHOOL OF TROPICAL MEDICINE, San Juan, P. R.—Dr. Ramon Miguel Saurez, Jr., Santurce, P. R.

Others in the class who have joined one of the Services and announced no special hospital appointment are:

Dr. Frank Matthew Booth, Jr., Huntington, W. Va.

Dr. Raymond Sidney Brown, Gloucester.

Dr. Robert Luikart<sup>1</sup> Chamberlain Philippi, W. Va.

Dr. George Edwin Cox, Covington.

Dr. James Hubert Davidson, Lexington.

Dr. Edward Garland Davis, Jr., Richmond.

Dr. Willard Milton Fitch, Allentown, Pa.

Dr. Thomas Walton Green, Burkeville.

Dr. Charles Henry Hagan, Jr., Huntington, W. Va.

Dr. Larry Allison High, Richmond.

Dr. Claude Kelso Kelly, Aylett.

Dr. Frederick Vivan Lilly, Montgomery, W. Va.

Dr. Mann Terrell Lowry, Beaverdam.

Dr. John James Marra, Morgantown, W. Va.

Dr. Harvey Ray St. Clair, Staunton, Va.

Dr. William Harry Shaia, Richmond.

Dr. Archie Carey Thompson, Charleston, W. Va.

Dr. Forrest Prettyman White, Norfolk.

Dr. Philip Abney Wilhite, Jr., Richmond.

Dr. Fred Eugene Wise, Jr., Marmet, W. Va.

Dr. Sydnor Terry Withers, Abingdon.

Dr. David Earl Yoho, Moundsville, W. Va.

### University of Virginia Finals.

Graduation exercises for the Department of Medicine were held on June 16th. At this time they were addressed by Dr. Staige D. Blackford, a member of the faculty on army leave, who has recently returned from duty with the 8th Evacuation Hospital in Italy. As a gift to the University, the class presented a portrait of Dr. Harvey E. Jordan, Dean of Medicine.

The following are graduates with hospital appointments:



UNIVERSITY OF VIRGINIA HOSPITAL, Charlottesville—Drs. Marshall David Baxter, Washington, D. C.; Lewis Frazier Bell, Staunton; Franklin Talmadge Buchanan, Bristol; Charles Lucian Crockett, Jr., Roanoke; Don Abbot Gaddis, Arlington; John Pinckney Harloe, Charlottesville; Robert Price Irons, Elkins, W. Va.; Stephen Brooks Longley, Madison, N. J.; David Smythe McKee, Bristol; William Milholland Patterson, Pittsburgh, Pa.; George Ward Shannon, Broadway; and Donald Shotton, Suffolk.

DEPAUL HOSPITAL, Norfolk—Drs. William Dimmock Buxton, Newport News; and Dahar Cury, Jr., Norton.

MEDICAL COLLEGE OF VIRGINIA, Richmond—Dr. Lawrance Samuel Miller, Bridgewater.

U. S. NAVAL HOSPITAL, Ft. Eustis—Dr. Edwin Booth Vaden, Gretna.

PRESBYTERIAN HOSPITAL, New York, N. Y.—Dr. Miller Shannon Allen, Jr., Bland.

LONG ISLAND COLLEGE HOSPITAL, Brooklyn, N. Y.—Dr. Francis Wilbur Fitzhugh, Jr., Charlottesville.

ALBANY MEDICAL SCHOOL HOSPITAL, Albany, N. Y.—Dr. Herbert Durant Gullick, Greenville, S. C.

KING'S COUNTY HOSPITAL, Brooklyn, N. Y.—Dr. Marcel Jerome Hornowski, Jamaica, N. Y.

KING'S COUNTY HOSPITAL, Long Island, N. Y.—Dr. William Eager Kelly, Bristol.

ST. LUKE'S HOSPITAL, New York, N. Y.—Dr. Lewis George Richards, Roanoke.

NEW YORK POST-GRADUATE HOSPITAL, New York, N. Y.—Dr. Mason Romaine, III, Petersburg.

PHILADELPHIA GENERAL HOSPITAL, Philadelphia, Pa.—Dr. Melvin Gustavus Alper, Wytheville.

ST. LUKE'S HOSPITAL, Bethlehem, Pa.—Drs. Max Baumeister, Jr., Norfolk; and William Laird Sager, Danville.

PROTESTANT EPISCOPAL HOSPITAL, Philadelphia, Pa.—Drs. William Klipstein Harryman, Jr., Hackensack, N. J.; and William Dulaney Lewis, Jr., Richmond.

WESTERN PENNSYLVANIA HOSPITAL, Pittsburgh, Pa.—Dr. Milton Segal, Norfolk.

BETH ISRAEL HOSPITAL, Newark, N. J.—Drs. Herbert Murray Levitt, Petersburg; and Ralph Robbins, Miami Beach, Fla.

MEDICAL CENTER, Jersey City, N. J.—Dr. Charles Alfred Rothfuss, Williamsport, Pa.

HOSPITAL FOR WOMEN OF MARYLAND, Baltimore,

Md.—Dr. Teodoro Alberto Arias, Panama City, R. P.

JOHNS HOPKINS HOSPITAL, Baltimore, Md.—Dr. Robert Stewart Boyd, Winchester.

UNION MEMORIAL HOSPITAL, Baltimore, Md.—Dr. Samuel Henley Carter, The Plains.

EMORY UNIVERSITY HOSPITAL, Emory, Ga.—Dr. William Earl Bloomer, Dearborn, Mich.

HILLMAN AND JEFFERSON HOSPITAL, Birmingham, Ala.—Drs. Wade Hampton Brannon, Anniston, Ala.; and James Austin Davis, Bessemer, Ala.

ST. LOUIS CITY HOSPITAL, St. Louis, Mo.—Drs. Lewis Smith Chase, Hartford, Conn.; and Acors William Thompson, Falls Church.

U. S. NAVAL HOSPITAL, New Orleans, La.—Dr. Crawford Hal Cleveland, Jr., Anniston, Ala.

TOURO INFIRMARY CLINIC, New Orleans, La.—Dr. Louis Sparkman Graham, Jr., Pittsburgh, Pa.; and Raeburn Carson Llewellyn, Foley, Ala.

WINSTON-SALEM CITY HOSPITAL, Winston-Salem, N. C.—Dr. Wilber Russell Ellis, Jr., Wakefield.

DUKE UNIVERSITY HOSPITAL, Durham, N. C.—Dr. Myers Hampton Hicks, Florence, S. C.

BOWMAN-GRAY HOSPITAL, Winston-Salem, N. C.—Dr. Henry Clas Newsome, Jr., Winston-Salem, N. C.

DELAWARE HOSPITAL, Wilmington, Del.—Dr. William Cary Fleming, Yorktown.

CHILDREN'S HOSPITAL, Los Angeles, Calif.—Dr. Charles Irving Fuller, Jr., Norton.

MARY HICKOCK HOSPITAL, Hanover, N. H.—Dr. Martin Edward Gallagher, Jr., Norfolk.

VANDERBILT UNIVERSITY HOSPITAL, Nashville, Tenn.—Drs. George Benjamin Garis, Nashville, Tenn.; and William Rankin Nelson, Charlottesville.

BAPTIST MEMORIAL HOSPITAL, Memphis, Tenn.—Drs. Richard Hubert Lowe, Roanoke; and Thomas Murrell Thornhill, Jr., Lynchburg.

MASSACHUSETTS GENERAL HOSPITAL, Boston, Mass.—Dr. Carl William Gottschalk, Salem.

U. S. NAVAL HOSPITAL, Pensacola, Fla.—Dr. Clifton Rhodes Gruver, Washington, D. C.

EMERGENCY HOSPITAL, Washington, D. C.—Dr. Lloyd Bratton Harrison, Jr., Washington, D. C.

GOOD SAMARITAN HOSPITAL, Portland, Ore.—Dr. Jack Lee Herrell, Manassas.

HARPER HOSPITAL, Detroit, Mich.—Dr. David Benjamin Levy, Suffolk.

ROPER HOSPITAL, Charleston, S. C.—Dr. Leo

nidas Rosser Littleton, Jr., Arlington.

U. S. NAVAL HOSPITAL, Charleston, S. C.—Dr. Richard Deaton Nauman, Richmond.

COLORADO GENERAL HOSPITAL, Denver, Col.—Dr. Edward John Lowell, Jr., Denver, Col.

HARTFORD GENERAL HOSPITAL, Hartford, Conn.—Dr. Edward Van Zile Scott, Birmingham, Ala.

LAKESIDE HOSPITAL, Cleveland, Ohio—Dr. Frederick Victor Vance, Jr., Bristol, Tenn.

Other graduates were:

Dr. Ann Butterworth, West Hartford, Conn.

Dr. Esther Blanchard Herrell, Charlottesville.

### Medical Society of Virginia.

As Dr. Mulholland, President, has stated, there will be no general meeting of the Medical Society of Virginia this year, on account of orders from the Office of Defense Transportation to restrict attendance upon meetings to not more than fifty (50) persons from out of town. For the same reason, there may be only an "abbreviated" meeting of the House of Delegates, as has been explained to each of the component societies. However, as there are only forty-eight component societies, it is hoped each one may arrange to have a representative at the meeting of the House of Delegates. This is to be in Roanoke, October 22 and 23. The Council will meet on Monday morning and the House of Delegates will hold sessions on Monday afternoon and Tuesday morning. Hotel Roanoke will be headquarters for this meeting and representatives are urged to make reservations promptly as the hotel will have only a limited number of rooms available.

### Re-Appointed to State Board of Medical Examiners.

From nominations made by the House of Delegates of the Medical Society of Virginia at its last session, Governor Darden has re-appointed Dr. John W. Preston as examiner from the Sixth District, for a term of five years, effective July 1, 1945.

### Appeal for Release of Medical Officers Not Needed by Armed Forces.

Release of Indiana physicians in the armed forces who are not needed to provide complete medical care for men and women of the armed services was urged in a statement made today by the executive committee of the Indiana State Medical Association, as follows:

"Now that V-E Day is passed and we are expecting the release from service of part of our armed

Forces, immediate consideration should be given to the release of as many of the doctors as is consistent with the best interest of the armed forces and of the civilian population. Promptness in reducing the size of the Medical Corps should be the positive aim of everyone having responsibility in this field. There should never be a time when any doctor is being kept in the military service with nothing for him to do professionally in connection with his military status. He should not be kept in the service to do things which could as well be done by those not trained as physicians. \* \* \*

"The Executive Committee of the Indiana State Medical Association urges that those in authority look upon the early and prompt release of physicians, when they can be spared, as a matter of the utmost urgency and importance—and when we say 'when they can be spared', we must be understood to mean that every soldier, sailor, marine, nurse, WAC, WAVE, or SPAR, or anyone else who needs medical care in connection with military services will have it, even without the physicians who are to be dismissed. But after all the armed services are taken care of, any delay in releasing a physician should be avoided as an injustice to the public, an unnecessary burden on the treasury, a source of criticism of those in authority, and unfair treatment of the physician who is serving his country."

### New President of Southern Medical Association.

Dr. E. Vernon Mastin of St. Louis, Missouri, elected vice-president of the Southern Medical Association at its last annual meeting, became president of the Association upon the recent death of Dr. Ballenger.

### News from the University of Virginia, Department of Medicine.

The Board of Directors of the John and Mary R. Markle Foundation has made an additional grant of \$2,400 to Dr. Ralph B. Houlihan in support of his study of agglutinative action of streptococcus viridans on blood platelets.

The Director of the Office of Scientific Research and Development has extended the duration of Dr. D. C. Smith's contract in support of his research on Penicillin in the Treatment of Syphilis for a period of six months with an allocation of funds in the amount of \$2,150.00.

Graduation exercises for the fourth year class were held in Cabell Hall on Saturday, June 16th, at 11:30 A. M. The degree of Doctor of Medicine was conferred on 65 graduates. Of these, 45 students received commissions in the Army and 17 in the Navy. Lt. Colonel Staige Davis Blackford, recently with the Eighth Evacuation Hospital in Italy, gave the graduation address.

Dr. Fletcher D. Woodward attended the meeting of the American Board of Otolaryngology in New York. He, also, attended the meeting of the American Academy of Otolaryngology and Ophthalmology Committee on the Conservation of Hearing.

#### **Married.**

Captain Richard Phillips Bell, M.C., AUS., class of '38, University of Virginia Medical School, and Lieutenant Hilda Steele Franklin, ANC., of Fieldale, May 26th. They are stationed in Italy with the 8th Evacuation Hospital. Captain Bell is the son of Dr. and Mrs. R. P. Bell of Staunton.

Dr. Franklin William Mallamo, Fairmont, W. Va., and Miss Dorothy Marie Bowler of Richmond, June 18. Dr. Mallamo is a member of the class of '45, Medical College of Virginia, and will intern at St. Francis Hospital, Pittsburgh.

#### **Dr. L. R. Broome,**

Connected with the staff of Catawba Sanatorium for seventeen years, for six of which he was physician-in-chief, has located in Danville as assistant to City Health Officer, Dr. R. W. Garnett. Being a specialist in tuberculosis, he will devote half of his time to Hilltop Sanitarium, where he will be the chief medical officer. Dr. Broome plans to push diagnostic clinics for the early discovery of tuberculosis and hopes the city authorities may install a complete X-ray outfit at the Health Department for chest examinations. In addition to the above, he will also do private consultation work in tuberculosis.

#### **Dr. E. Lynwood Bagby,**

After practicing in Richmond for several years, has moved to Richlands where he is connected with the surgical department of the Clinch Valley Clinic Hospital.

#### **Dr. Mason Romaine**

Has returned to his home in Petersburg, after

completing a graduate course in medicine at Johns Hopkins University in Baltimore.

#### **News of Doctors In Service.**

Promotions have recently been noted for the following Virginia doctors in Service:

*To Lieutenant Commander:*

Dr. Wellford C. Reed, Richmond.

*To Colonel:*

Dr. Guy Winston Horsley, Richmond.

*To Lieutenant Colonel:*

Dr. Arthur Morton Smith, Jr., Charlottesville.

*To Major:*

Dr. Harry Brick, Richmond.

Dr. Edwin McRae Rucker, Richmond.

*To Captain:*

Dr. Fleming Wood Gill, Richmond.

Lt. Colonel Harry J. Warthen, Jr., of Richmond, is at the present time Chief of Surgical Service at the AAF Regional and Convalescent Hospital, Camp Davis, N. C. He is also AAF Surgical Consultant to the Northeastern District, U. S. A. This entails visiting the Surgical Services of the AAF Hospitals in the 17 States included in the Northeastern District, which extends from Maine to Alabama. Each District Consultant also serves as a member of the Surgical Advisory Board to the Air Surgeon.

#### **Dr. Saunders on Westbrook Staff.**

Dr. John Rudolph Saunders, who recently resigned as superintendent at the State Hospital at Morganton, N. C., has become a member of the medical staff of Westbrook Sanatorium in Richmond. He is a native of North Carolina and a graduate in medicine from the School of Medicine of Emory University in 1926.

#### **Richmond Tuberculosis Association.**

At the annual meeting of this association on May 29, Dr. Emily Gardner was elected president, succeeding Dr. T. Dewey Davis who has served in this capacity for two years. Dr. Gardner is the first woman to hold this office since the organization of the association in 1916. Miss Nora Spencer Hamner is executive secretary.

#### **Schenley Laboratories, Inc.,**

Is presenting a series of 13 broadcasts over the Columbia Broadcasting System which began Tues-



day, June 5th. The series, entitled "The Doctor Fights", features leading Hollywood dramatic motion picture stars in half hour dramatizations of the actual feats accomplished by medical officers of the armed forces during World War II. It is planned, wherever possible, to cut in from Washington and other points, the surgeons and physicians whose stories are being dramatized.

The program series is being broadcast from Hollywood at 9:30 p.m., e.w.t., over CBS, on Tuesday.

#### **Medico-Legal Conference and Seminar.**

The Department of Legal Medicine of the medical schools of Harvard, Tufts, and Boston University in association with the Massachusetts Medico-Legal Society will present a six-day program of lectures, conferences, and demonstrations, October 1-6, in Boston, having to do with the investigation of deaths in the interests of public safety. Attendance during five of the six days of the course will be limited to fifteen persons who have registered in advance. On one day (October 3) the program will be open to any physician, lawyer, police official, or senior medical student who may care to attend.

Further information may be obtained from the secretary of the Massachusetts Medico-Legal Society, 25 Shattuck Street, Boston.

#### **For Sale.**

General Electric, Model R-38, 39, Diagnostic X-Ray Unit, combination Radiographic and Fluoroscopic, with standard Bucky diaphragm 200/260 v; 60 cy. Also holder for chest work. Used by private practitioner only one year previous to entering military service. All accessories available. Excellent condition, put away by G. E. agent. Cash sale only. Address Mrs. J. W. Sinclair, Warrenton, Virginia. Telephone Warrenton 168. (*Adv.*)

#### **Wanted—**

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#### **Wanted—**

One qualified to act as Superintendent of Hospital and Nurses Training School at the Petersburg Hospital. Please send application, including qualifications, to Mr. J. Gordon Bohannon, Petersburg, Virginia. (*Adv.*)

## Obituaries

---

### **Dr. Beverley Randolph Tucker,**

Internationally known neuropsychiatrist, died June 19 after a short illness. He was seventy-one years of age and graduated from the Medical College of Virginia in 1905. After several years of study in neuropsychiatry in this country and Europe, he returned to Richmond where he engaged in private practice. In 1908 he established the outpatient clinic in nervous diseases at the Medical College of Virginia. Dr. Tucker was appointed professor of neurology and psychiatry at the College in 1912, filling a newly created chair. In the same year he opened a small private sanatorium which has been enlarged several times and is now known as the Tucker Hospital. Dr. Tucker had many and varied professional connections. He was the first Richmond Juvenile Court physician, one of the founders of the Children's Memorial Clinic, served as a member of the State Board of Health, was chairman of the first Governor's Mental Advisory Board at the State Penitentiary, was a member of the board of the Industrial Home for Girls, and Consulting physician to the State Colony for Feebleminded and Epileptics.

Dr. Tucker was the author of several books and plays, both professional and non-professional, but considered his work in the study of pellagra as among the most important. He was one of the first to report epidemic encephalitis in this country, and in 1919 he introduced a special autogenous spinal treatment for the disease in its acute form. He was also one of the early physicians to advance the idea that conduct disturbance was a medical problem. He was also a co-editor of the former *Old Dominion Journal of Medicine and Surgery*.

Dr. Tucker had always taken an active interest in the work of the Medical Society of Virginia, having joined in 1907. He served on the Publication Committee for a number of years, and also on the Committee of the Society which compiled the History of Medicine in Virginia in the 17th, 18th and 19th centuries.

His wife and four children survive him. One son is Captain Weir Mitchell Tucker, member of the Army Medical Corps.

**Dr. James Alexander Waddell,**

For a number of years professor of pharmacology, materia medica and toxicology at the University of Virginia Medical School, died on June 8, at his home in Charlottesville. He was a native of Albemarle County and sixty-seven years of age. He graduated in medicine from the University of Virginia in 1911. His service at the University was started as an instructor in anatomy and he became a full professor in 1917. Dr. Waddell was a member of several special societies relating to his work as well as his local and State medical societies. His wife and two daughters survive him.

**Dr. Frederick William Shaw,**

Richmond, since 1924 connected with the department of bacteriology and recently parasitology at the Medical College of Virginia, died May 29. Though in ill health for some time, he had continued his research work until the day before his death. Dr. Shaw was born at Halifax, England, sixty-two years ago, but came to this country in childhood, and graduated in medicine from the University of Kansas in 1906. Shortly thereafter, he entered the government service and was stationed for sometime in the Philippines. During World War I, he served as a major in the medical corps. After this, he was connected with the University of Missouri until he came to Richmond, and here he was a member of both his local and State medical societies. His wife and a daughter survive him.

The Richmond Academy of Medicine, in resolutions on Dr. Shaw, states: "In the years that we have known him we learned to regard him as a man of exceptional knowledge, which, in his kindly way he was always willing to give to those who sought his help. He was ever loyal to his friends, to his students and to his colleagues."

**Dr. George Craig Eggleston,**

Prominent physician of Amelia, died June 14th after a brief illness. He was seventy-four years of age and a graduate of the Medical College of Virginia in 1893. Dr. Eggleston had been a member of the Medical Society of Virginia for twenty-eight years. His wife, three sisters and three brothers survive him.

**Dr. Thomas Latane Driscoll,**

President of the James River Medical Society,

died May 30th, at his home, "Folly Farm", in Cumberland County. He was sixty years of age and a graduate in medicine from the University of the South, Sewanee, Tenn., in 1906. He served with the Medical Corps of the Army during World War I, and again for a time during World War II. After World War I, he located in Richmond for practice and was connected with the department of syphilology and dermatology of the Medical College of Virginia. About seven years ago he went to his home in Cumberland County. Here he was engaged in general practice and was attending physician at the Cumberland prisoner of war camp. His wife and a daughter survive him.

**Dr. Harvey Green Johnston,**

Pearisburg, died March 21st, at the age of 66. He was a graduate of the former University College of Medicine, Richmond, in 1899, and served as county medical examiner for the Selective Service during World Wars I and II.

**Dr. Edgar G. Ballenger,**

Atlanta, Ga., president of the Southern Medical Association, died suddenly, June 1, as the result of a fall believed due to dizziness. He was a native of North Carolina and sixty-seven years of age. His medical degree was obtained from the University of Maryland in 1901. After a few years in that State, he moved to Atlanta and became one of the first urologists there. Dr. Ballenger saw service in World War I, being discharged with the rank of major, and was prominent in the medical profession. A son survives him.

**Resolutions on Dr. S. E. Hughes.**

WHEREAS it has pleased Almighty God to remove from our midst Dr. S. E. Hughes, one of our senior fellows and for many years an outstanding physician of our city and community, BE IT RESOLVED:

*First:* The community has lost a valuable and greatly beloved citizen as well as a good friend and able doctor.

*Second:* The medical profession regrets his passing and will miss his willing and able consultations and his genial spirit.

*Third:* That a copy of these resolutions be sent to Dr. Hughes's family, to the VIRGINIA MEDICAL MONTHLY, and spread on the Minutes of our Academy of Medicine.

H. A. WISEMAN, JR.,  
E. HOWE MILLER,  
C. W. PRITCHETT.

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# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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August 1945

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## *Guest Editorial*

### Veterans Administration

THE shortcomings of the Veterans Administration as it relates to medical and surgical treatment of disabled veterans have to a certain extent been exposed by Deutsch in *Medical Economics*, Maisel in *Readers Digest*, and others. Some remedies have been advised such as elimination of most of the paper work, the appointment of an outstanding medical man as top authority (he should not be over 55, senility has been pointed out as one of the defects of present staff), adequate pay to attract men of ability.

Now, how are the staffs of the various facilities to be rejuvenated, kept alert, and informed? By reading medical literature and attending post-graduate courses? No! that will not work! I suggest a visiting staff selected by the faculty of the nearest medical college made up of key men in the various departments such as medicine, surgery, orthopedics and psychiatry, each chief to be accompanied by a resident, or equivalent, actually to oversee or carry out staff orders, while staff remains at the Facility. Visiting staff should consist of not less than eight men—should remain on duty at Facility not less than two weeks. They are to consult with the permanent staff, but the opinions and directives of the visiting staff will be put in effect. This setup will have the effect of a refresher course applied on spot.

Also, and not the least important, the visiting staff and not political overlords shall determine, from performance, just who shall be promoted and just who shall be retired. These staff visits should be made not less than twice a year. I believe that the medical colleges will cooperate in such a plan by granting leave to such staff men for the performance of this essential service to our disabled veterans. They are entitled to the best and under the present system are not getting it. Only by continuing contact with teaching staffs of our outstanding medical colleges can the permanent staffs be kept abreast the progressive march of medical science. I am not suggesting that colleges "lend lease" these staff men to the government but that they be compensated adequately.

W. WALLACE GILL, M.D.

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EDITOR'S NOTE: Dr. Gill, an outstanding physician of Richmond, is a veteran of World War I, and consequently has a double interest in the Veterans Administration.

## GENERAL USES OF PENICILLIN IN OTOLARYNGOLOGY\*†

FLETCHER D. WOODWARD, M.D.,  
Charlottesville, Virginia.

The use of penicillin is rapidly becoming more widespread as increasing supplies are being produced by the various pharmaceutical manufacturers. Because of this rapid increase in the employment of this new drug, and the rather limited experience of any individual in its use, I am reporting our experience in the treatment of a group of 59 patients, with the hope that it may be of some value to those who have yet been unable to secure this drug for any purpose other than for the treatment of desperately ill patients. As experience accumulates I believe many new uses will be found, and many new methods for its application will be developed. At present, old and time-proven drugs and surgical procedures are adequate to handle most infections, and the ease of administration and efficacy of the newer sulfonamides make the use of penicillin unnecessary in most instances. However, in those infections in which these procedures are inadequate, the value of penicillin becomes apparent.

Fortunately, the great majority of acute infections with which otolaryngologists have to deal are susceptible to the sulfonamides, but penicillin is more effective, and at the same time is useful in a larger group of bacteria, as well as for many bacteria which have become resistant to the sulfonamides. It is also effective under certain conditions, such as in the presence of pus, and is practically free of toxic and allergic reactions. The difficulty of administration furnishes the main objection to its use today.

The local application of penicillin has been limited in our work to the treatment of chronic purulent otitis media and to its use in the ear after radical mastoidectomy. In each instance we have used a solution of 500 units per c.c. This solution is so prepared that when two drops are placed in the ear every two hours, during the average waking period, the solution will last approximately seven days. Beyond this period the drug becomes ineffective because of deterioration.

Fifteen cases of chronic purulent otitis media

were selected because they had resisted all other forms of treatment, had been present many years, and the odor was quite objectionable. The results in these 15 cases were encouraging: 8 ears became dry; the odor disappeared in 11; 4 were improved; and 3 were unimproved. Of these 3, 2 were subsequently given one million units intramuscularly, with the result that one became dry, but the other case was unimproved.

A study of this group seems to indicate that the best results are in those cases in which there is a large perforation, without cholesteatoma or advanced osteitis; in other words, unless the drug can reach the diseased area, it cannot be effective. The marked effect on the odor, although difficult to explain, was most gratifying. No bad results were noted other than the strange development of a diffuse external otitis in 3 cases, during the administration of the drug. This condition promptly responded to wet boric acid packs, after the medication with the penicillin solution was discontinued. One patient had an associated erysipelas which did not react to local treatment. This condition cleared rapidly under the systemic use of sulfadiazine, so penicillin was not used intramuscularly.

The cultures from chronic otitis cases usually show a mixed group of bacteria, with the Colon group, *Proteus*, *Diphtheroids*, and other penicillin-resistant organisms predominating, which is in contrast to those cultures of acute infections in which *Streptococci*, *Staphylococci*, and *Pneumococci* predominate and are susceptible to penicillin. For this reason, one cannot hope for any dramatic results in the local treatment of chronic otitis, except in certain cases in which both the bacterial and mechanical factors are favorable. Since the odor in these cases is usually due to penicillin-resistant organisms, it is difficult to explain its disappearance in such a large group. Further study of this gratifying result will be necessary.

The same local procedure was used post-operatively in the tympanic cavities of 12 radical mastoidectomies, after the initial packing had been removed. It was uniformly successful in 10 instances, and no doubt contributed to prompt healing and

\*Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, Charlotte, N. C., January 15, 1945.

†From the Department of Otolaryngology, University of Virginia Hospital, Charlottesville, Va.

epithelialization of the cavities. Again, in 2 cases it set up a diffuse external otitis, and its application had to be discontinued. Further investigation of this phenomenon might reveal that we were dealing with penicillin-resistant organisms whose activity was encouraged by the wet medicine and the destruction of those which were susceptible.

Penicillin was used systemically in 4 cases of otitic complications, as follows:

A sixty year old woman was admitted who had had pneumonia 2 months previously and was given sulfadiazine for 2 weeks. One ear had discharged constantly for one month, and on admission a frank mastoiditis was present. Cultures from the ear and urine showed pneumococcus, Type III. A simple mastoidectomy was done and she was placed on sulfamerazine. In spite of this she had a chill and high temperature 2 days later, and the blood culture showed large numbers of Type III pneumococci. The sulfamerazine was discontinued on the third day, and 15,000 units of penicillin were given intramuscularly every 3 hours. The temperature was normal in 3 days. She was treated for 6 days and one million units were given. Recovery was uneventful.

The second case was that of a 15 year old girl, admitted in delirium. The history was that she had an upper respiratory infection 2 weeks before, followed in 3 days with meningitis. She was given sulfathiazole by mouth, and did well for 8 days. She then became much worse and was brought to the hospital. Both blood and spinal fluid cultures were positive for pneumococci, Type III. She was placed on sulfadiazine and her blood level maintained at 20 mg. per 100 c.c. 160,000 units of Type III anti-pneumococcal rabbit serum were given in the first 2 days. Her blood culture was negative on the third day. But spinal fluid culture was still positive, so 10,000 units of penicillin were given intrathecally every day for 13 days, and 10,000 units were given intramuscularly every 3 hours. Both temperature and spinal fluid were normal in 2 days after institution of treatment with penicillin. A total of one million units was given. Recovery was uninterrupted. On admission to the hospital she had an acute otitis media, which promptly cleared, so we assumed that the meningitis was otitic in origin.

A third case of otitic meningitis, due to Type III pneumococcus, was similarly treated, and recovery was uneventful.

The fourth case was one of chronic mastoiditis and septicemia from phlebitis of the sigmoid sinus. The organism was *B. proteus*. No response was obtained from either sulfadiazine or penicillin. Prompt and extensive surgery served to clear this infection, and the patient recovered after a long convalescence complicated by a metastatic lung abscess.

There were 2 cases of marked cellulitis of the face, following the extraction of upper molar teeth. The infection was due to *S. viridans*, and recovery was slow but complete, following incision and drainage and penicillin. One case was treated intravenously as well as intramuscularly. Two other cases of cellulitis of the neck and lower jaw followed the extraction of lower molar teeth. One was due to an anaerobic streptococcus, and the other to the staphylococcus aureus hemolyticus and non-hemolyticus. Both made prompt recovery, and were treated by both the intravenous and intramuscular routes. Approximately 800,000 units were given in each instance.

Penicillin has not been used locally in nasal sinus or pulmonary infections. We have contemplated its use in maxillary sinus infections, by local injection after lavage through the natural ostia; but since most of these cases clear so well under the older methods of therapy, it has not yet been employed.

Three cases of nasal furunculosis and facial cellulitis, due to the staphylococcus aureus, have been treated systemically. All made a prompt and uneventful recovery. A fourth case developed phlebitis and thrombosis of the cavernous sinus on one side and also recovered. Intravenous drip and intramuscular routes were used.

Four cases of severe acute sinus infections have been treated systemically with good results.

The first, a month old infant, with an acute maxillary sinusitis, osteomyelitis of the anterior wall, and facial cellulitis due to the staphylococcus aureus, was given one million units of penicillin, both intravenously and intramuscularly. The aspiration of 15 c.c. of pus from a cheek abscess and incision and drainage of a metastatic osteomyelitis of the femur, were the only surgical procedures done. Approximately one month later the face and sinuses were well healed, and roentgenograms of the femur showed progressive repair of the pathological fracture in the femur.

The second case was that of a boy twelve years



of age who had an acute frontal sinusitis and spreading osteomyelitis of the skull, due to the staphylococcus aureus hemolyticus. The process was entirely arrested under penicillin given intramuscularly. The sinuses healed without surgical intervention, but a sequestrectomy of a part of the frontal bone was subsequently carried out. Recovery was uneventful.

The third case was an adult who had an acute pansinusitis, due to the hemolytic streptococcus, associated with chills and a high septic type of temperature. Repeated blood cultures were negative. There was no response to lavage of the maxillary sinuses and sulfadiazine; but one million units of penicillin, given intramuscularly, brought about a slow but steady recovery. This was the only patient in our series who manifested a toxic or rather allergic reaction to penicillin. He had a rather severe, urticarial-like skin eruption and marked conjunctivitis. These soon cleared when the administration of the drug was discontinued. This allergic reaction might be due to one's sensitization to the spores of penicillin notatum which is not uncommon in the air.

The fourth case was that of a patient who had a chronic sinusitis and bronchiectasis, who was admitted with an acute respiratory infection and high temperature. This patient improved rapidly and temperature was normal in 4 days. The chronic manifestation of cough and sputum was likewise improved, approximately 75 per cent.

One severe complication of nasal origin was treated, a meningitis due to the pneumococcus Type III, which followed a routine submucous resection. The meningeal infection was assumed to have arisen as a result of the operative trauma in the presence of the particular organism, since the operative work was limited to the lower septum, in order to restore an airway. The possibility of fracture through the cribriform plate was remote in this instance.

Among the group of chronic infections of the sinuses, the results of adequate treatment were discouraging. One patient with chronic purulent

frontal sinusitis showed no improvement. Two with chronic sinusitis and bronchiectasis showed no improvement. Four patients with advanced nasal allergic degeneration, sinusitis, asthma, and bronchiectasis showed no or negligible improvement.

The cultures in these patients were mixed, staphylococcus aureus, streptococci, *S. viridans* predominating.

The results in three cases of lung abscess were most encouraging. The first, an elderly man with an early abscess of the right upper lobe, cleared rapidly under bronchoscopic aspiration and penicillin given intramuscularly. The second case required external surgical drainage, and the third, a lobectomy. Both had a smooth post-operative convalescence under penicillin therapy.

We have a final group of five miscellaneous cases. The results were as follows: One: Meningococcic meningitis, well and discharged in 17 days. Two: Oculo-glandular tularemia, no result from therapy. Three: Tracheobronchitis following removal of a peanut from the lung, and tracheotomy complicated by bilateral pneumothorax; recovery in four days. Four: Subacute thyroiditis, no result from therapy. Five: Actinomycosis jaw, improved.

In conclusion, we feel that the local use of penicillin in chronic otitis media will be effective in certain selected cases only. In post-operative mastoid wounds, it is of real value. In the treatment of chronic sinusitis and bronchiectasis, it is of no or negligible value when given systemically; and, although we have not used it locally, I doubt that it will be of any real benefit.

For the treatment of acute infections and complications arising from infection in the respiratory tract, it is of real value, and the results are often dramatic. However, it must be remembered that it is only useful to those types of infection which are susceptible to the drug, and that many of these can be treated just as successfully with the sulfonamides and other older methods of therapy.

*104 East Market Street.*

## SOME LONG SHOT CASES OF CANCER THAT RECOVERED\*

J. SHELTON HORSLEY, M.D.,  
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The problem of cancer is one of the most important that affects the health of the human race. Each year there are more than 160,000 deaths from cancer in the United States alone. This is more than double the number of deaths that occurred from cancer thirty years ago.

Cancer is doubtless more beset by superstition and prejudice than any other disease. The fallacious statement that we do not know what causes cancer and, consequently, can do nothing about its cure is disastrous. Ascertaining the cause of a disease may or may not effect its therapy. The present methods of treating cancer are quite satisfactory if the diagnosis is made early and the proper treatment is then applied.

There are many types of cancer, just as there are many types of acute infectious diseases, and the kind of cancer, its location and extent should determine the treatment. In some instances, radiation, either from radium or x-ray, is the best treatment, and in other cases surgical operation is preferable. Sometimes a combination of these gives the best results. In cancer of the breast or prostate regulation of the secretion of the gonads is indicated. It is just as important to give the correct dosage and application of x-ray as it is to carry out correctly the technique of an operation, and only roentgenologists well trained in this therapy can get the best results. If an early diagnosis is made and proper treatment applied, the great majority of cancers can be cured. It is when the disease has lasted a long time and has become extensive that treatment often fails. But all of the late cases are not necessarily hopeless. The earlier the diagnosis is made, the more difficult it is. Not infrequently, as in tumors of the breast or face, the correct diagnosis cannot be made in the early stages without a biopsy. If healthy tissue must be incised before reaching the tumor, as in the breast, a radical operation should be done at once if cancer is found. Otherwise, the malignant cells may invade the incised normal tissue.

No effort has been made in this paper for a statistical study of these cases. Naturally in far ad-

vanced cancer the deaths far out-number the cures. The object of this paper is to show that in some instances what appear to be hopeless cases may be cured or at least benefited, though of course this should not be taken as an excuse to delay operation or proper treatment in early cases.

## CANCER OF THE BREAST

These three cases of cancer of the breast are reported because, in each of them, there had been an incomplete operation with partial excision or biopsy some time preceding the radical operation. It is well known that such cases offer a very poor prognosis for cure, especially in younger patients.

*Case 1.*—Mrs. C. B. A., age 33 years, had noticed a small lump in the left breast in January, 1937. Her mother died of nephritis and carcinoma of the left eye. On June 11, 1937, a left local mastectomy had been done elsewhere. Microscopic examination showed cancer. She then had thirty roentgen-ray treatments over the region of the left breast and axilla. Six weeks after these treatments she noticed a small lump in the left axilla and was given fifteen more roentgen-ray treatments, but the lump remained. Examination on admission to St. Elizabeth's Hospital, November 18, 1937, showed the skin over the left thorax and left axilla brown from the roentgen-ray treatments and there were palpable lymph nodes in the left axilla. On November 19, 1937, a radical operation for recurrent carcinoma of the left mammary gland and bilateral oophorectomy were performed. This was the first case in which this combined operation was performed. Microscopic examination of the axillary lymph nodes showed adenocarcinoma, grade 4. In some cells there was evidence of the effect of irradiation, but in most areas the cancer cells did not seem to be affected. The patient was well, with no recurrence, on February 5, 1945, more than seven years and two months after operation. She appears to be in perfect health.

*Case 2.*—Mrs. R. P. H., age 42 years, was admitted to St. Elizabeth's Hospital August 10, 1940. Three weeks before admission the patient had noticed a small, hard, painless mass in the upper outer

\*Read before the Richmond Academy of Medicine, Tuesday, February 27, 1945.

quadrant of the left mammary gland. One week before admission the tumor had been removed elsewhere and microscopic examination showed cancer. She was otherwise in good condition. On August 10, 1940, a radical operation for carcinoma of the left mammary gland and bilateral oophorectomy were

performed. Her mother died of cancer of the ovary. In June, 1940, a small tumor was removed from the patient's left breast elsewhere. Two months before admission to St. Elizabeth's Hospital she noticed another small tumor just lateral to the old incision. There had been infrequent sharp pains. On admis-



Fig. 1.—Mrs. R. H. B. Anterior view of specimen from partial gastrectomy and resection of the transverse colon. The tumor involves the pyloric portion of the stomach at the greater curvature and the adjacent mesentery of the transverse colon. (From Some Atypical Cases of Malignancy of the Stomach, J. Shelton Horsley, *The Southern Surgeon*, 4:227-239, August, 1935).

performed. Microscopic examination showed adenocarcinoma, grade 3 plus. The lymph nodes in the axilla were hyperplastic, but apparently not cancerous. This patient was in good health and had no recurrence when last heard from on February 5, 1945, four years and six months after operation.

*Case 3.*—Mrs. A. D. W., age 38 years, was admitted to St. Elizabeth's Hospital on February 3,

1941. Her mother died of cancer of the ovary. In June, 1940, a small tumor was removed from the patient's left breast elsewhere. Two months before admission to St. Elizabeth's Hospital she noticed another small tumor just lateral to the old incision. There had been infrequent sharp pains. On admis-



operation, stated there has been no recurrence and she is in excellent health.

These three cases have been previously reported (Horsley, J. Shelton: "Bilateral Oophorectomy with Radical Operation for Cancer of the Breast", *Surgery*, Vol. 15, No. 4, pp. 590-601, April, 1944), but they have been followed up and at a further interval of nearly a year since the first report was made these

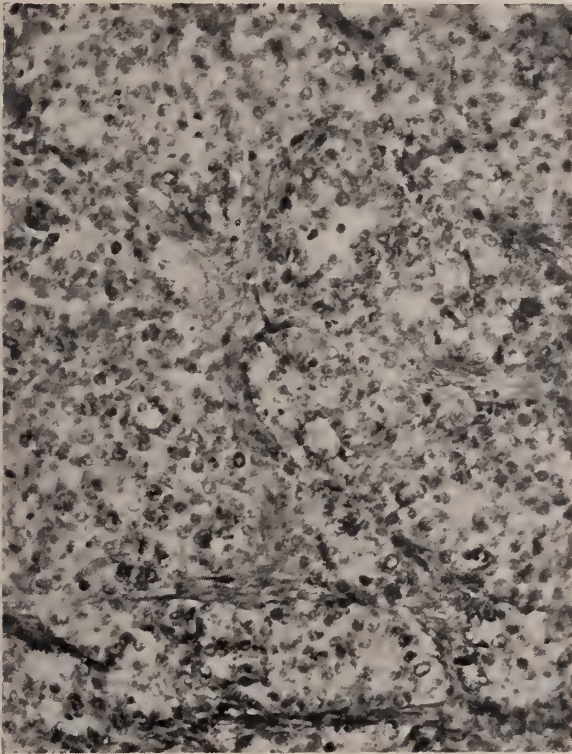


Fig. 2.—Photomicrograph from cancer of the stomach shown in the preceding illustration. The growth is quite cellular and appears to be active with many mitotic figures. It may be classed at least as grade 3. (Reduced from X 200).

patients are still well. Heretofore, such cases in my own experience have almost invariably had recurrences.

The notable feature about these three cases is that at the radical operation, both ovaries were removed. The estrogen secretion of the ovaries stimulates mammary cancer. Experimentally, cancer of the breast can be reproduced in rats and mice by excessive doses of estrogen given over a period of a few weeks. While clinically this has not been absolutely proved, several instances have been reported of probable development of cancer of the breast in women from the administration of estrogen products. It would seem, then, that many recurrences after a radical

operation for cancer of the breast are from cancer cells that were left behind when the operation was



Fig. 3.—Mrs. W. B. L. Drawing of anterior view of total gastrectomy. The lesser curvature shows an area with involvement of the pancreas. There are enlarged lymph nodes along the lower border. (From Three Successful Cases of Total Gastrectomy by J. Shelton Horsley, *Virginia Medical Monthly*, 70:549-553, November, 1943).

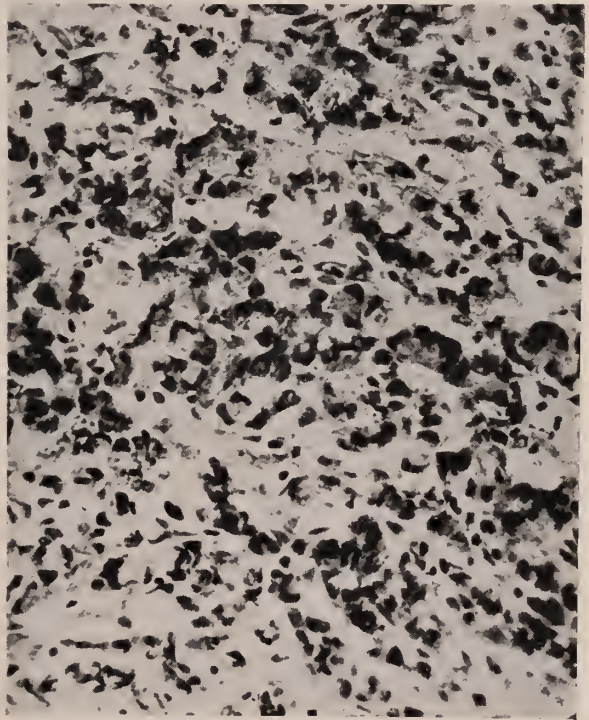


Fig. 4.—Photomicrograph of cancer shown in Figure 3. There is a moderate amount of colloid and many of the cells have eccentric nuclei. (Reduced from X 350). (From *Virginia Medical Monthly*, 70: 549-553, November, 1943).

done, and if the stimulating effect of estrogen products can be entirely removed at the time of the radical operation these cells may perish. This does not in any way extend the indications for a radical operation for cancer of the breast, because if any demonstrable metastases are found that would ordinarily



Fig. 5.—Roentgenogram taken 22 days after the operation. There is ample opening between the esophagus and the jejunum.

contra-indicate a radical operation, removal of the estrogen products would probably not be effective.

Loeb and his colleagues (Loeb, Leo, Blumenthal, H. T., and Kirtz, Marian Moskop: "The Effectiveness of Ovarian and Hypophysial Grafts in the Production of Mammary Carcinoma in Mice, *Science*, 99: 230-232, March 24, 1944) have shown that

mammary cancer, after reaching a certain stage of development, may be capable of growing under its own metabolism independently of estrogen. This appears to be particularly true when metastases in lymph nodes are left, because here the cancer cells seem to some extent protected from the influence of estrogen that circulates in the blood. However, a few isolated cancer cells in the subcutaneous or deep tissues may depend upon estrogen products for survival.

Of the 160,000 deaths from cancer every year it is estimated that about 15,000 are from cancer of the breast. An early radical operation with excision of both ovaries in premenopausal cases would probably cut this death rate in half.

#### CANCER OF THE STOMACH

Cancer of the stomach is estimated to be responsible for more deaths than cancer of any other organ. One reason for this is the absence of symptoms in the early stage. Unfortunately, early cancer rarely causes pain or other symptoms and when they are present frequently the disease is far advanced.

This patient, Mrs. R. H. B., has been previously reported in 1935 (Horsley, J. Shelton: "Some Atypical Cases of Malignancy of the Stomach", *Southern Surgeon*, Aug., 1935, Vol. 4, pp. 227-239), but a follow up shows that at present, almost 11 years since the partial gastrectomy, she is well and without recurrence.

*Case 4.*—Mrs. R. H. B., age 67 years, entered the hospital December 5, 1933, complaining of shortness of breath and loss of appetite of one month's duration. She had had no pain, diarrhea, constipation or bloody stools, but had had slight intestinal gas. There was a mass in the right abdomen on a level with the umbilicus. X-ray examination revealed a fairly movable stomach on the greater curvature of which near the pylorus was a gross defect that was believed to be due to cancer. Gastric analysis before admission showed no free hydrochloric acid, 10 combined acid in fasting specimen, 22 in 30-minute specimen, 6 in 45-minute specimen, and 20 in 60-minute specimen. She was operated upon December 15, 1933. The stomach was adherent to a mass which was incised and drained foul, rather thick, light yellowish pus.

She left the hospital January 12, 1934, and for about five weeks she felt better and had a good appetite, but a month before readmission she gradually



became weaker, with frequent abdominal distention, eructation of gas, loss of appetite, nausea, and the passage of very dark-colored stools. There was a mass, not tender on pressure, at the site of the previous abscess. X-ray examination showed a filling defect in the stomach. At operation on March 24, 1934, a partial gastrectomy was done with resection

before this Academy and published in the *VIRGINIA MEDICAL MONTHLY* in November, 1943.

*Case 5.*—Mrs. W. B. L., age 50 years, of Bedford, Virginia, was admitted to St. Elizabeth's Hospital May 24, 1943. She gave a history of having had "stomach trouble" for twelve months during which time she had lost 25 pounds in weight. She had



Fig. 6.—Mr. C. L. G. Photograph of pulsating tumor of the anterior mediastinum. (From *Pulsating Tumors of the Anterior Mediastinum*, J. Shelton Horsley, *S. G. and O.*, 75:49-53, July, 1942).

of much of the transverse colon and appendectomy (Fig. 1). A letter, dated February 3, 1945, from the patient states: "So far as I know there is not anything wrong with me except old age. I was 79 in January. I have not been sick since my operation to amount to anything. I do my own work and get on fine."

An interesting feature about this patient, too, is not only the extent of the disease and the complication that she had, but histologically the cancer seemed quite malignant, at least grade 3 (Fig. 2).

A case of far advanced cancer of the stomach, Mrs. W. B. L., with total gastrectomy was reported

pain four or five hours after eating. There were nausea and vomiting, with relief after vomiting.

A total gastrectomy was done on May 28, 1943. It was necessary to remove the spleen. There was involvement of the pancreas near the region of the gastric artery. The adherent portion of the pancreas was excised with the hot electric cauter. The lesion, adenocarcinoma, grade 3, involved most of the stomach (Figs. 3 and 4).

The patient made a very satisfactory recovery: her temperature was never above 99.8° except on June 10 when she had a short attack of pyelitis. She was discharged from the hospital on June 24,





Fig. 7.—Photograph showing lateral view of pulsating tumor of the anterior mediastinum. (From *S. G. and O.*, 75:49-53, July, 1942).

1943. Figs. 3, 4 and 5). Figure 5 shows x-ray plate 22 days after operation.

In a letter received from the patient on September 8, 1943, 3 months after operation, she said she had an excellent appetite, could eat almost anything, usually had some discomfort for a short time immediately after meals, but was feeling quite well. The discomfort was doubtless due to distention of the jejunum. The patient returned for a checkup on June 21, 1944. She seemed in very good condition. She had gained 18 pounds in weight since leaving the hospital. Both legs were somewhat swollen, more marked on the right side. The blood examination showed hemoglobin 70 per cent; r.b.c. 4,050,000; w.b.c. 9,450. Non-protein nitrogen was 32 mgm.; blood sugar 80 mgm., blood chlorides 415 mgm., and total proteins 5.49.

She had not been heard from since June, 1944, until a letter of December 11, 1944, from her daughter stated that patient died on November 19, 1944. There was no necropsy, but probably there

was recurrence of the cancer. She had had more than a year of comfortable life.

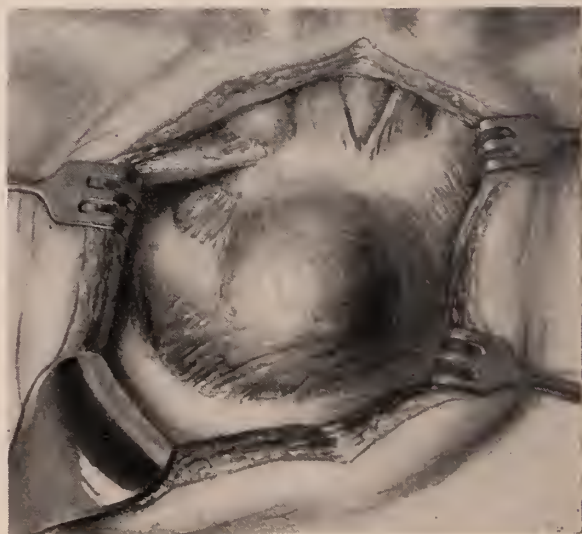


Fig. 8.—Drawing showing the fascia and muscle over the tumor exposed at operation. (From *S. G. and O.*, 75:49-53, July, 1942).

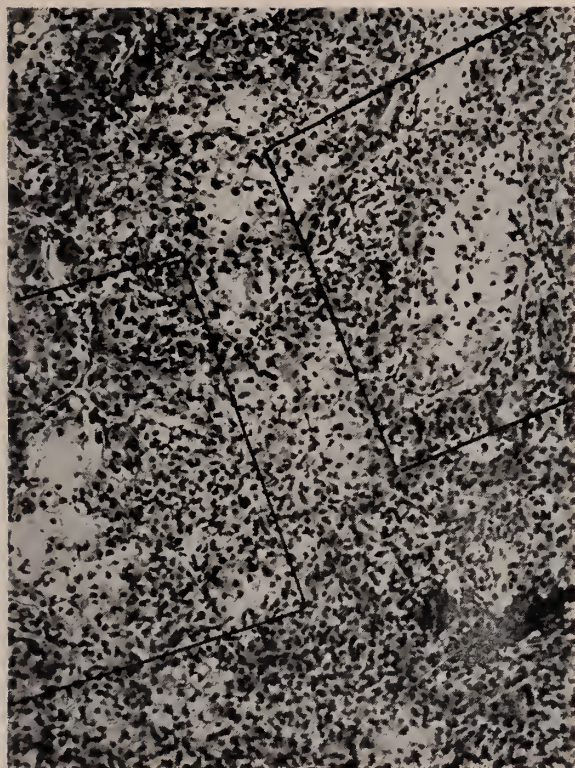


Fig. 9.—Photomicrograph of the tumor (Reduced from X 150). Note the structure with acinous formation, clear cells and other cells packed in close formation. (From S. G. and O., 75:49-53, July, 1942).

#### CANCER OF THE ANTERIOR MEDIASTINUM

*Case 6.*—The case of Mr. C. L. G., age 74 years, with tumor of the anterior mediastinum, has been previously reported in July, 1942 (Horsley, J. Shelton: "Pulsating Tumors of the Anterior Mediastinum", *Surg., Gyn. and Obst.*, Vol. 75, 49-53, July, 1942), but this is a final report. He was admitted to the hospital on July 8, 1940. There was a pulsating growth in the upper sternum slightly to the right of the midline. He had first noticed it about four months prior to admission. It had gradually increased in size. It had never been tender or painful. A left nephrectomy had been performed on the patient by Dr. Roy W. Upchurch, of Danville, on May 23, 1933. There was an impacted stone in the lower third of the left ureter. The kidney was a pyonephrotic sac full of pus. There was no evidence of malignancy. On July 10, 1933, Dr. Upchurch did a transurethral resection of an enlarged middle lobe of the prostate. There was no cancer. The patient recovered satisfactorily from both operations.

On admission the patient was in fairly good gen-

eral condition for his age. Wassermann test was negative. Blood and urine were about normal. There was a pulsating mass over the upper manubrium slightly to the right of the midline (Figs. 6 and 7). The pulsations were expansile and synchronous with the heart beat. There was no bruit. The tumor was about 6 cm. in diameter and 4 cm. in elevation. The heart seemed to be normal. Blood pressure was 170/95 in both arms. X-ray examination showed a defect in the upper manubrium. The defect was smooth in outline and about 5 x 4 cm. Dr. Fred M. Hodges, who made the roentgenological examination, thought the lesion was probably a tumor of the anterior mediastinum. The heart and aorta appeared normal under x-ray. The expansile pulsation was so obvious that I made a tentative diagnosis of aneurysm of the right internal mammary artery.

He was operated upon July 10, 1940. After an incision through the skin and fascia over the tumor, the pulsations diminished and ceased completely when some of the surrounding bone was removed (Fig. 8). The pulsation had evidently been transmitted from the aorta through the tumor. The tumor

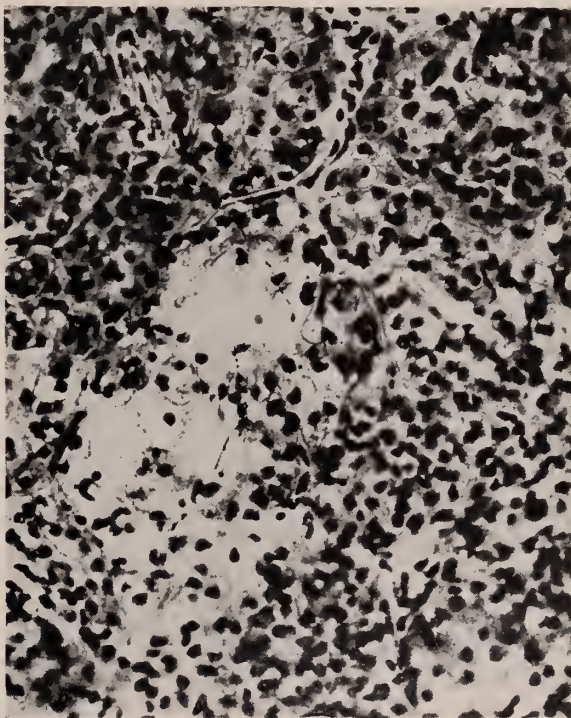


Fig. 10.—Photomicrograph showing higher magnification of blocked off area on the left side of Fig. 9 (Reduced from X 360). Note the clear cells at the top of the acinous formation. (From S. G. and O., 75:49-53, July, 1942).



was soft and was held firmly by the fascia. As much of the growth as possible was removed. It was extensive and bled so freely that some of the posterior part of the tumor was left. Five radium needles, each containing 10 mgms. of radium, were inserted and iodoform gauze was firmly packed in the wound. The wound was partly sutured over the gauze.

The specimen consisted of a large portion of the tumor and several smaller portions. The largest portion measured  $5 \times 4 \times 2\frac{1}{2}$  cm. There was an apparent capsule which was really fascia and muscle that the growth had pushed forward. The tumor was soft, almost jelly-like and pale yellow color. Adherent to its outer edges were several spicules of bone that had become attached to the tumor as it eroded through the sternum. There were three other pieces of the tumor, the largest of these measuring  $3 \times 2\frac{1}{2} \times 1\frac{1}{2}$  cm. Microscopically, the tissue consisted chiefly of epithelial cells with very scant stroma. The cells varied in size and shape. They were round, polyhedral, cubical and columnar. Throughout much of the microscopic field the cells were arranged in acinus-like formation. Occasionally the acini were distinct and contained large,



Fig. 11.—Higher magnification of the blocked off area on the right of Figure 9. (Reduced from X 360). Note the distinct acinous formation of columnar cells with slightly granular and almost clear cytoplasm. Surrounding cells of different sizes and shapes are packed closely together. (S. G. and O., 75:49-53, July, 1942).

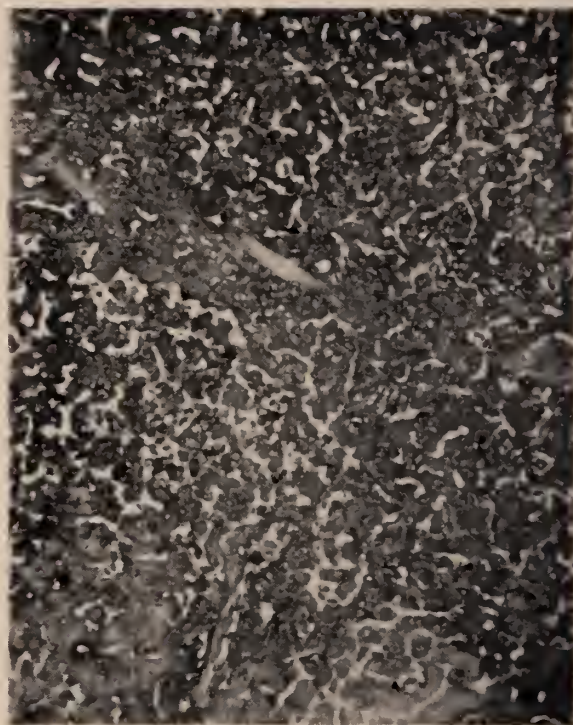


Fig. 12.—Photomicrograph taken December 6, 1940, 135 days after the end of the x-ray treatment. (Reduced from X 250). Note the apparent complete destruction of the tumor cells with merely amorphous material remaining.

clear, columnar cells. Other portions showed the cells packed rather closely together (Figs. 9, 10 and 11). In many areas the cells resembled those of adenocarcinoma of the kidney with almost clear cytoplasm and a small nucleus. The cytoplasm was usually slightly granular. Dr. A. C. Broders pronounced the tumor adenocarcinoma, grade 3, but was uncertain as to its origin. The margin of the bone that was removed seemed normal. The erosion was obviously due to pressure.

When the radium and packing were removed, there was profuse bleeding. The wound was opened and the vessels were controlled by sutures. One week after the operation x-ray therapy by Dr. Hodges was begun. There were 7 treatments. As the lesion was rather superficial, instead of using deep therapy the patient was given 130 kilovolts—6 millimeter aluminum filter, 70 minutes—approximately 1800 roentgens. Biopsy from the depth of the wound 2 days after the roentgenological treatment was completed showed degeneration of the neoplastic cells. He was discharged from the hospital one month after operation.



Biopsy from the depth of the wound 4½ months after the roentgenological treatment was completed disclosed complete degeneration of neoplastic cells (Fig. 12). Several plastic operations were done and



Fig. 13.—Mr. V. S. Photograph showing basal cell cancer of the left face.

the wound was finally closed, though a few spicules of bone later came through a small sinus.

The patient again entered the hospital on August 24, 1943, with arteriosclerosis of the lower extremities and a spastic duodenum. X-ray examination showed no recurrence of the tumor of the thorax, a spastic duodenum, and some bone destruction about 3 inches in diameter in the right iliac bone which was thought to be due to chronic infection. The blood vessels of the pelvis and around the ankles showed extensive calcification. There were diverticula in the sigmoid. There was no definite pathology in the chest. There were advanced arteriosclerotic changes in the vessels of both feet, more in the right foot. The chief credit for the apparent

cure of this unusual tumor is due to the effective x-ray treatment by Dr. Hodges.

The patient seemed to improve slowly for a while after leaving the hospital, but the discomfort in his legs increased and he gradually grew worse and died at his home, Chatham, Virginia, on February 5, 1944, 3½ years after operation. No post-mortem examination was made, but there appeared to be no recurrence of the tumor.

Morris and Harken (Morris, John H., and Harken, Dwight E.: *Ann. Surg.*, 1940, 112:1-21) have reported several cases of so-called Pancoast tumor. The Pancoast tumor originates in the posterior thoracic inlet adjacent to the pulmonary apex. The histological structure is that of an "epidermoid carcinoma". Pancoast believes that there are persistent rests from the ectodermal portion of the branchial structures which serve as primordial origin for the neoplasm he described.

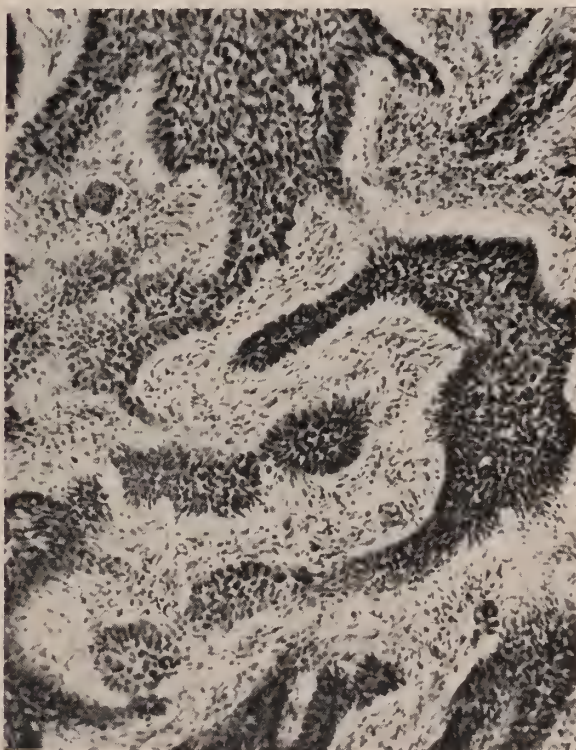


Fig. 14.—Photomicrograph (X 150) of basal cell cancer shown in Figure 13.

It would seem that this may be a tumor originating in rests from the portions of the branchial grooves or pouches that give entodermal or columnar and cubical epithelium. Such rests might be from

the lateral primordia of the thyroid from the fourth branchial groove, from the third branchial pouch which forms the thymus, or from the third and fourth branchial pouches from which the parathyroids arise. This does not call into consideration the ultimo-branchial transient structures.

A very interesting feature of this case is the contrast between the histologic picture of the tumor when first exposed by operation and the histologic picture after the x-ray treatment was given (Figs. 9, 10, 11 and 12).

necessary for the adjacent basal cell cancerous tissue to overcome this resistance before the cancer can spread. In basal cancer about the face, for instance, the lesion may continue to grow by contiguity or continuity of tissue but not by metastasis in the lymph nodes. With this in mind, if the cancer is removed as radically as possible with the cautery and afterwards the raw surface is covered with a pedicle flap taken at some distance from the growth so that the natural immunity in the tissues in the flap is preserved, frequently a cure may be obtained.



Fig. 15.—Photograph on June 20, 1944, just before transferring the pedicle flap.

#### EXTENSIVE BASAL CELL CANCER

Patients with extensive basal cell cancer are sometimes difficult to cure by radiation or operation, especially if bone or cartilage is involved. Basal cell cancer does not metastasize. So-called basal cell cancers that metastasize are either cases in which there is both basal cell and squamous cell cancer, or the cystic basal cell type which is somewhat different from the ordinary basal cell cancer. There seems to be something in the normal tissue that inhibits the growth of basal cell cancer and it appears

Case 7.—Mr. V. S., age 68 years, illustrates this, and while the time since the operation cannot be considered sufficient to justify the term "cure", so far there has been no evidence of recurrence while in 1943 there was rapid recurrence after operation. He had been operated upon by competent surgeons elsewhere and treated several times with radium.

In 1929 the patient noticed a lump on the left side of his face. There was no open lesion at the time, but several months later he saw his physician who told him it might be a cancer and cauterized it



with an electric needle. The lesion disappeared for a year, then a small shot-like node arose in the center of the scar. It broke down and began to drain. He returned to his physician in 1931 and the lesion

and stayed healed for three years. In 1943 the area was again excised and all but a small portion healed. Later that same year the unhealed portion was again excised, but the wound did not heal.



Fig. 16.—Photograph on July 13, 1944, just before division of the pedicle flap.

was treated with radium, but without benefit. In 1933 there was swelling in this area and also below the original lesion and the patient saw his doctor who treated both lesions with radium without effect. In 1935 he saw another physician who gave him intravenous injections for about five months. In 1940 he consulted a surgeon who excised the entire area and cauterized the base. The wound healed

Examination on admission to St. Elizabeth's Hospital, May 24, 1944, showed a large ulcerated lesion over the left malar region and paralysis involving the upper portion of the left facial nerve. The patient was unable to close his left eye and there were no wrinkles in the left side of his forehead (Fig. 13).

On May 26, 1944, two days after admission, the patient was operated upon under sodium pentothal



anesthesia. Biopsy showed basal cell cancer (Fig. 14). Much of the malar bone and the zygomatic process lay exposed in the floor of the lesion. After excising the ulcerated tissue with the hot electric cautery, the surface of the malar bone and the zygomatic process was thoroughly cauterized and the zygomatic process and the lateral portion of the malar bone were excised with bone forceps. The whole surface of the wound was then cauterized with the hot electric cautery. A long flap on the scalp and forehead was outlined by incision, with the base about the midline of the forehead and extending back laterally on the left side of the scalp to the occipital region (Fig. 15).

On June 4, 1944, the flap was further detached, and on June 20, 1944, the flap was transferred to the left temporal region (Fig. 16). On July 13, 1944, the pedicle was divided and the defect in the scalp was covered with Thiersch grafts.

The patient was discharged from the hospital on July 27, 1944, with the wound practically healed.

A letter, dated February 10, 1945, from his physician, Dr. Laurie Moore, of Beaufort, N. C., states that there is no evidence of recurrence.\*

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\*A letter from the patient's wife, under date of May 9, 1945, says there is a small ulcerated area just external to the left orbit. He has been urged to return for further examination and treatment, if necessary, but refuses to do so.

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### The Eye-Bank for Sight Restoration.

Formation of The Eye-Bank for Sight Restoration, Inc., which will collect and preserve healthy corneal tissue from human eyes for transplanting to blind persons who have lost their sight because of corneal defects, has been announced. The organization, national in scope, has been incorporated under the laws of New York State and 22 leading hospitals in New York City are now affiliated with it; in addition, 20 outstanding ophthalmologists throughout the country will serve in an advisory capacity. Headquarters are at 210 East 64th Street, New York City.

Between 10,000 and 15,000 blind persons with corneal defects, in the United States, may have an opportunity to see again through the activities of The Eye Bank. The operation substituting a healthy cornea for a damaged one can restore sight in only one type of blindness—that caused solely

by opacity of the cornea when the rest of the eye and optic nerve are normal.

The Eye-Bank has been established in order to make available to hospitals and surgeons who are qualified to perform the corneal graft operation a supply of fresh or preserved corneal tissue, wherever and whenever needed.

Any eye which is sent to The Eye-Bank will have a complete pathological study made and a report sent to the institution which supplied the eye, on request; also bacteriological studies will be made for possible contamination, etc. Institutions desirous of making their own pathological examination will have the eye returned to them in the proper preservative fluid. There are naturally many smaller institutions that do not have the facilities for the proper pathological examination of eyes, and one of the purposes of The Eye-Bank is to encourage complete pathological studies of all eye tissues sent to it.

## PARTIAL DUODENOPANCREATECTOMY ITS USE IN THE TREATMENT OF PANCREATIC MALIGNANCY— CASE REPORT\*

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Radical surgery of the pancreas is now going through a gradual evolution of operative procedures which will eventually, when sufficient cases have been collected, lead us to consider pancreatectomy as the operation of choice in carcinoma of the ampulla of Vater or of the periampullary region of the pancreas.

Removal of large parts of the pancreas was first described in detail in 1907 by Desjardins and in 1908 by Sauve, but due to the high mortality incident to this procedure and to the mistaken belief that pancreatic secretions were essential to life, the operation was not generally adopted by the profession until 1935. At this time Whipple, Parsons, and Mullins,<sup>1</sup> acting on the work of Dragstedt,<sup>2</sup> who had proven that in dogs the pancreatic ducts could be ligated without damage to gastrointestinal function reported the first duodenopancreatectomy, which was done on a case of carcinoma of the ampulla of Vater. Their first case died of a cholangitis after a few months, but their second case, done a short time later, survived for 28 months. Whipple advocated a two-stage operation. At the first stage he did a gastroenterostomy, a ligation of the common duct, and a cholecystogastrostomy. At the second stage he resected the second and third parts of the duodenum and the head of the pancreas and sutured the cut end of the gland.

In 1937 Brunschwig<sup>3</sup> did the first radical operation for carcinoma of the head of the pancreas. To eliminate the possibility of a cholangitis, which is likely when the stomach and gall-bladder are united, Brunschwig used a loop of jejunum to establish continuity with the biliary system, and this became a generally accepted procedure.

In 1938 Whipple,<sup>4</sup> also attempting to eliminate this complication of cholangitis, changed the operation he originally described by ligating the common duct, doing an anterior cholecystojejunostomy on the Roux principle of anastomosing the distal cut end

of the jejunum to the fundus of the gall-bladder, and then doing an end-to-side anastomosis of the proximal cut end of the jejunum to the side of the jejunum about 10 cm. below the cholecystojejunostomy. This was done as the first stage. At the second stage he did a gastrojejunostomy with excision of the descending portion of the duodenum, the

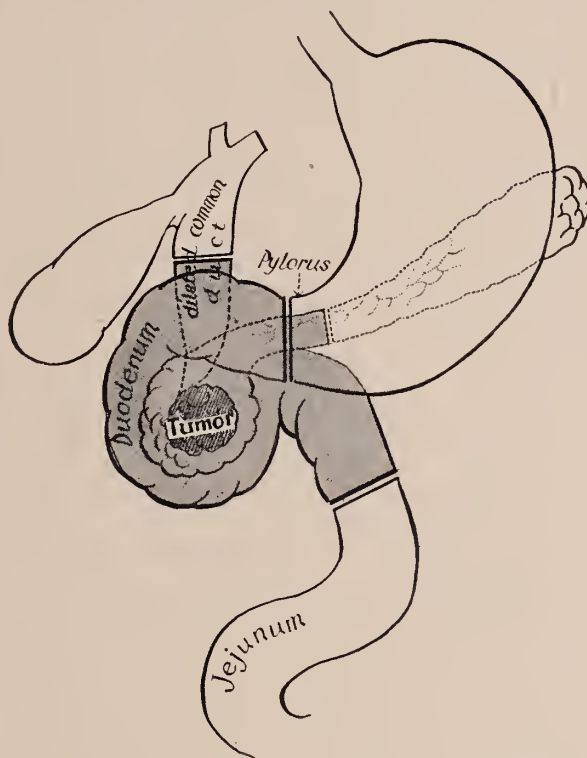


Fig. 1.—Shaded area shows the amount of tissue resected in a radical duodenopancreatectomy. Anything less than this amount is not sufficient.

lower end of the common duct, and the head of the pancreas.

Following the introduction of vitamin K, bile salts, blood plasma, and vitamin B, the need for the first stage, the prime function of which had been to relieve the jaundice, was no longer felt. In 1940 Whipple performed the first radical one-stage duodenopancreatectomy. A month later Trimble,<sup>5</sup> independently, repeated this operation and added several improvements.

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Many of the previous cases, in which the gall-bladder had been anastomosed to the intestinal tract, developed a biliary fistula because of failure of the

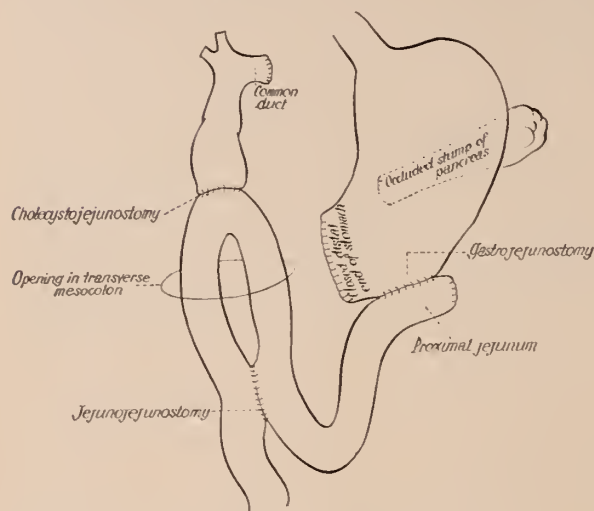


Fig 2.—Diagram showing the operation we performed in this case.

common duct to stay tied off. Trimble, therefore, used the common duct as the means of anastomosis

instead of the gall-bladder. He also advocated the removal of the distal end of the stomach as well as the entire duodenum, to eliminate the additional suture line and to eradicate the blind duodenal pouch. He anastomosed the stomach to the jejunum by the anterior Polya method. His case recovered. All of these changes have now been generally adopted.

The operation itself is a major one and one with high mortality. In a recent series, Hunt<sup>6</sup> reported a 30.6 per cent mortality in the 124 cases of pancreatoduodenectomy which he collected from the literature and from his own experience, but since the operation carried out the fundamental principles of cancer surgery in excising *en bloc* tissues wide of the growth, it continued to gain in favor. Heretofore, carcinoma of the pancreas was a fatal disease in a few months. Ransom<sup>7</sup> reported a series of over 100 cases in which palliative operations had been done. The average duration of life was 7.2 months in those in whom a follow-up had been done. We thus now have a method of prolonging life in these cases, and even though the results are still

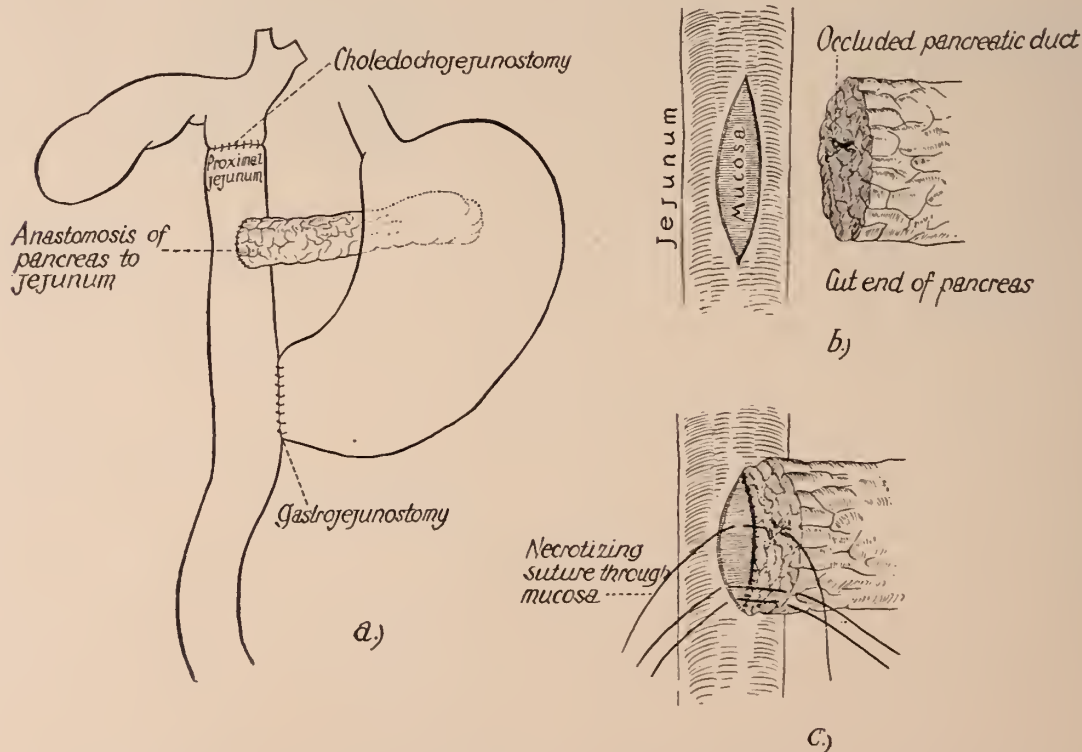


Fig. 3.—(A) Diagram showing the proposed operation for future cases (Whipple). (B) and (C) Cattell's method of anastomosing the pancreas and pancreatic duct to the jejunum. (B) shows the incision in the bowel wall through the serosa and muscularis, down to the mucosa. The pancreatic duct is ligated. (C) showing the method of suturing the pancreas to the bowel.



poor, there is definite improvement as more cases are done. It seems likely that the procedure will soon be perfected to offer a much better prognosis than we have at present.

Unfortunately, a great number of patients with cancer of the pancreas do not present clinical symptoms until the disease has progressed too far for surgery to offer much in a curative manner. Even when clinically the patient seems operable, only a few of those patients with pancreatic malignancy will be found to be operable as far as the radical resection is concerned. To overcome this handicap in part, we feel that every patient who has an obstructive jaundice is entitled to an exploration if at all possible, and the operation should not be too long delayed.

At operation, one is faced with two problems: whether the lesion in the head of the pancreas is malignant or not, and whether the pancreas is resectable or not. Accurate palpation will most often aid in determining if the lesion is malignant, and, in addition, a biopsy should be done. If a positive report is given for the frozen section, the question is settled. However, more often than not, the report will be that of chronic pancreatitis, a report which does not rule out malignancy, for as the tumor grows it obstructs small ducts and a chronic inflammation will develop about the tumor. This encirclement of the tumor is of varying thickness and it may be that this layer will be all that is biopsied, and the actual tumor missed. It is, of course, a tragedy to do this radical operation and then find that no tumor was present. However, the decision of whether or not to proceed with the radical operation must rest with the surgeon at the operating table.

Insofar as the operative procedure is concerned, it is important that the head of the pancreas and the duodenum be mobilized as the first step, for often the tumor will be found to be adherent to the superior mesenteric vessels, or there will be deep involved lymph nodes and the lesion will prove inoperable. Should this be the case, the operation can easily be discontinued and some form of palliative surgery done. In our case the lesion grossly was definitely operable.

#### CASE REPORT

J.E.K., a 63 year old Negro minister, was admitted to the St. Philip Hospital on April 16, 1944,

complaining of weakness, itching, and jaundice. He had been well until two months before admission when he noticed a tired, heavy feeling in the upper abdomen and a loss of appetite. About four weeks before admission he developed generalized itching and noticed that his stools were light in color and his urine was darker. His family history and past history were irrelevant.

On physical examination the patient was found to be quite jaundiced. The liver was palpable 2 cm. below the costal margin. A firm, irregular mass was felt in the right upper abdomen. It seemed to be fixed and it did not move with respiration.

The specific gravity of the urine was 1.023; the urine was dark brown in color and acid in reaction; albuminuria was graded 1; a positive reaction for bile was obtained; the urine was negative for urobilinogen and positive for urobilin. The concentration of hemoglobin was 80 per cent; erythrocytes were numbered 3,690,000 and leukocytes 5,200 in each cubic millimeter of blood. The prothrombin time was 16 seconds. The Van den Bergh test gave an immediate direct reaction. With the patient in a fasting state the concentration of sugar was 108 mg. per cent. The icteric index was 70 mg. per 100 cc. of blood.

A diagnosis of obstructive jaundice was made, believed to be due to a malignancy in the head of the pancreas. The patient was transfused twice prior to operation and given ample doses of vitamins B, C, and K.

At operation on April 22, 1944, under nitrous oxide, oxygen, and ether anesthesia, the abdomen was opened through an upper right rectus incision. A malignancy of the pancreatic head was found and confirmed by biopsy. A radical one-stage duodenopancreatectomy was then proceeded with and completed in five and one-fourth hours. The head of the pancreas and the duodenum were mobilized by incising the peritoneum along the greater curvature of the duodenum. The lesion was found to be adherent near the superior mesenteric artery but it could be removed without harming the vessel. The lower part of the stomach was divided and the superior pancreaticoduodenal artery ligated. The cystic duct entered the common duct just above the superior level of the duodenum and it was with some difficulty that the common duct was divided. It was obvious that it would be necessary to use the gall-

bladder for the anastomosis to the bowel, as the length of the common duct which remained was too short. The duct was doubly ligated with silk and chromic catgut. The pancreas was then transected an adequate distance away from the palpable induration around the tumor, the pancreatic duct ligated, and the cut end of the pancreas closed with interlocking mattress sutures of fine silk. The pancreas and duodenum were dissected free from the underlying structures. The ligament of Treitz was incised and the jejunum transected about 3 cm. distal to the ligament. The distal segment was closed and the duodenum and head of the pancreas were removed. A posterior isoperistaltic side-to-side gastrojejunostomy was done and the transverse mesocolon sutured to the bowel just below the anastomosis. A long loop of jejunum was then brought up anteriorly and anastomosed to the gall-bladder. A jejunojejunostomy was then done between the efferent and afferent loops of jejunum which led to the gall-bladder anastomosis. The pancreatic bed was drained through a stab wound, and the operative wound closed.

The specimen consisted of two centimeters of stomach, including the pylorus, the entire duodenum, two inches of jejunum, part of the common duct, and the head of the pancreas. The pathologist found an adenocarcinoma, grade 3, two centimeters in diameter, in the head of the pancreas. The adjoining pancreatic tissue was fibrotic and cystic. There was almost complete atrophy of the acinar tissue with only islet tissue remaining. The ducts were widely dilated.

The patient stood the long operation remarkably well. On the first post-operative day his blood sugar was 204 mg. per cent, but his urine was free of sugar at all times. Small amounts of insulin were given along with his intravenous glucose for the first few days and then discontinued. His blood sugar returned to normal. On the eighth post-operative day he developed an obstruction in the jejunum where it went through the transverse mesocolon and it was necessary to re-operate upon him to relieve this condition. He recovered from this procedure. During the course of his treatment he received seventeen transfusions, four of which were from donors who had been given vitamin K before the blood was taken from them. Just as we felt that a satisfactory recovery was within reach, the patient, on the twelfth

post-operative day, became very listless and his pulse became weaker. His blood pressure gradually fell in spite of blood transfusions, and, although he remained conscious, it seemed that he was dying in spite of any treatment which we could offer him. We had been giving him pancreatin and large doses of vitamin A along with his regular diet, but we were unable to obtain any lipocaic. The patient's temperature gradually rose to 106° F. and he died on the thirteenth post-operative day. Permission for an autopsy was granted but we were not allowed to examine the head for evidence of a cerebral accident. Postmortem examination failed to reveal a cause of death. The operative sites were well healed and functioning.

We have no good explanation for the sudden change in this patient's condition. We felt, somehow, that the operation was a success technically, but we still were unable to prevent the death.

#### DISCUSSION

The chief problems in pancreatectomy had been the development of biliary and pancreatic fistulae. The biliary fistulae had theoretically been eliminated by Trimble's operation. The pancreatic fistulae, though troublesome, usually healed spontaneously, or the fistulae were later anastomosed to the bowel. These fistulae, however, brought up the main problem of whether the pancreatic secretions were necessary or not. It had already been shown that human life was compatible with the absence of these secretions, but there was definite evidence that their absence seriously impaired fat and protein absorption. When the pancreatic ducts were ligated during a partial pancreatectomy,<sup>8</sup> there was an atrophy of the remaining pancreas and a fatty infiltration of the liver. If this secretion from the pancreas, however, escaped by means of a fistula, these changes did not develop. Obviously, fatty infiltration of the liver was not necessarily due to the absence of this secretion from the gastrointestinal tract, but was probably due to the atrophy of the pancreas. Dragstedt<sup>9</sup> and his associates discovered a specific substance in alcoholic extracts of beef and pork pancreas which, on oral administration to depancreatized dogs treated with insulin, permitted a survival and prevented the fatty degeneration and infiltration of the livers of these animals. They suggested that the pancreas, in addition to insulin, man-



ufactures another hormone, the function of which is the control of fat metabolism. This factor they called lipocaic.

On the basis of these tests, it would seem that the pancreatic remnant should be allowed to function or else substitution therapy would have to be given. If this were true, a complete removal of the pancreas should always cause the patient to need lipocaic or else the operation would be fatal. In 1942, however, Priestly<sup>10</sup> did a total pancreatectomy for an islet-cell adenoma. The operation was successful and the patient was in excellent health sixteen months later. Though he did have a definite disturbance in fat and protein digestion, no lipocaic deficiency developed. Each additional case seems to confuse the accumulated evidence. It has now become evident, as Blalock<sup>11</sup> points out, that some people get along without the external pancreatic secretion; others get along without it but lack the full digestive powers for fat and proteins, while still others lack these powers and do poorly. Unfortunately, we have no way of telling beforehand which type of patient we are dealing with.

In a recent summary of this problem, Dragstedt,<sup>12</sup> from his work on dogs, concluded that if 80 to 90 per cent of the pancreas was removed, there was no interference with digestion, provided the pancreatic duct emptied into the intestinal tract. If 90 to 95 per cent of the pancreas was removed, however, with the remnant being left attached to the duct, digestion and absorption were impaired and lipocaic was usually required. If a complete pancreatectomy was done, digestion was impaired and lipocaic was always needed. Permanent occlusion of the ducts produced a similar impairment, and if partial pancreatectomy was also done, the atrophied remnant became deficient as an endocrine organ and lipocaic deficiency appeared.

In spite of this strong evidence in favor of retaining the pancreatic secretions, there are still many adherents to the other side of the question. Brunschwig, who routinely obliterates the pancreatic remnant, recently reported a four year survival of a monkey who had the pancreatic duct ligated. Even though he and other prominent workers in this field maintain that the preservation of pancreatic secretion is unnecessary and time-consuming, stating that there is no evidence that an anastomosis of the pancreas or its duct actually functions, it seems that it

is more sound physiologically to maintain the secretion if at all possible. Whipple, on the other hand, had occasion to reoperate upon a patient on whom he had done a radical duodenopancreatectomy three and a half years previously. He found the pancreatic remnant to be fibrosed, with a cystic degeneration, and functionless. This factor led him to adopt an anastomosis of the pancreas to the intestinal tract as a routine measure. Cattell<sup>13</sup> has always maintained that this procedure should be done, and in none of his cases has lipocaic been necessary. This question remains the major problem in surgery of the pancreas and it is only as a larger number of cases is done, over a longer period of time, that some definite conclusion can be reached.

Because of the unfortunate outcome in our patient, we have added very little to the growing information about pancreatectomy. In following this case as closely as we did, however, we could not help but be impressed by the manner in which his clinical course simulated that of infants who have a congenital cystic fibrosis of the pancreas. Literature on this similarity appears to be lacking, and it may be that there is no connection between the two conditions, but theoretically they are the same in so far as the function of the pancreas is concerned. Babies with this congenital disease have, in effect, a pancreatectomy. The ducts become occluded by a thick tenacious material which destroys the pancreatic cells and produces a fibrosis.<sup>14</sup> When the process has gone far enough the pancreatic secretion is blocked off from the intestinal tract. Following the failure of the pancreas, through atrophy and fibrosis, the liver becomes involved in a similar process, which results in cirrhosis. The process extends to all of the glandular structures of the body and eventually reaches the lungs which become bronchiectatic. A pulmonary infection sets in and the patients always die of the pulmonary complication. On substitution therapy and large doses of vitamin A, this progression of events does not develop, and one child has been kept alive for seven years on this regime.

The pathological picture in our case which we have just presented was markedly similar to that in these infants. Our patient had a fibrosed pancreatic remnant and obstruction of the biliary ducts in the liver with early fatty degeneration, all of which fit in with the classical picture of pancreatic insuf-



ficiency. We used the same substitution therapy in our case as is used in these infants, but we obviously started it too late to be of much benefit. Is this not more evidence—clinical evidence—that the body does need the pancreatic secretions if it is to survive for long periods of time?

It seems most logical, then, that to prevent death following a radical duodenopancreatectomy we must prevent pancreatic insufficiency. In spite of evidence to the contrary, we are able to deduct only that if the pancreatic secretions are maintained and allowed to enter the intestinal tract by one manner or another, the pancreas will continue to function and normal body physiology will be maintained. In our future cases, we are certain that we shall attempt to preserve the pancreatic duct and implant it into the bowel. Of the various methods of doing this, we favor the technic described by Cattell, who makes a longitudinal incision in the serosa and muscularis of the jejunum and sutures the pancreatic duct to the mucosa with a necrotizing suture (fig. 3 B and C). He then sutures the rim of the pancreas to the margins of the incision in the outer layers of the bowel. If this anastomosis fails to function we can still resort to substitution therapy of lipocaic, nutramigen, pancreatin, or lecithin.

The operative procedure for removal of the head of the pancreas is about standardized and when the question of the manner in which the pancreatic remnant is treated is cleared up we feel certain that pancreatectomy will be the operation of choice in malignant lesions of the pancreas. The essential features of the operation seem to be: (1) the use of the common duct instead of the gall-bladder for anastomosis with the jejunum; (2) removal of the distal part of the stomach and all of the duodenum; and (3) placement of the gastric anastomosis so that it will be distal to the biliary anastomosis to prevent an often fatal cholangitis. We believe that continuous spinal anesthesia is the anesthesia of choice.

It will still be several years before we have a standardized and fully acceptable operation, but we are convinced that we have a sound physiologic procedure based on accepted radical cancer surgery principles that is used on what would otherwise be a fatal disease.

#### SUMMARY

1. The evolution of duodenopancreatectomy is presented along with reasons for the changes as the

number of operations increased.

2. Even though the mortality of the operation is still over 30 per cent, the operation has increased the life expectancy in cases of carcinoma of the pancreas or ampulla of Vater.

3. A case of partial duodenopancreatectomy is presented which resulted in death on the thirteenth post-operative day of unknown causes.

4. The question of whether the external pancreatic secretion is necessary or not is explored. It is our conclusion that the secretion must be retained if survival is to be maintained for any great length of time.

5. Pancreatectomized individuals are compared to cases of congenital fibrocystic disease of the pancreas.

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#### DISCUSSION

DR. CARRINGTON WILLIAMS, Richmond: I hesitate to discuss this paper because I have never done one of these operations. I have, however, read a considerable amount of literature on the subject, because I have had two patients whom I explored thinking they might be suitable cases for this procedure. Neither one was on account of the extent of the disease.

I think the first thing that occurs to medical men in discussing an operation of this magnitude is whether or not we are ever justified in attempting such a procedure. I think we are, because, with the careful method of diagnosis that Dr. Lee has outlined, these patients are

headed for death in a relatively short while; and the fact that the mortality is high should not deter us from attempting to save a few, at least for a certain length of time. When we look back on the operative procedures that are nowadays commonplace and that are performed with relatively low mortality, such as operations on the stomach, and consider that in the days of Billroth, who was one of the pioneers in gastric surgery, the mortality was as high as Dr. Lee reports for this procedure, and when we think of the early days of chest surgery and how the removal of a lobe of a lung carried a tremendously high mortality and how nowadays the chest surgeon operates with confidence in removing all or part of a lung, I think we are justified in proceeding with confidence along this line.

The hazards confronting the surgeon are, first, a technical one at the time of operation, and, second, the physiologic disturbances that come after the operation. Dr. Lee is certainly to be congratulated on getting his patient by the first danger. The technical part of this procedure was carried out in such a manner that the patient survived the first phase of it.

Dr. Lee said he was uncertain about the cause of death. Certainly the patient's death was due to some disturbance of the physiology of the body, whether or not we can put our fingers on it.

Concerning Dr. Lee's description of his technical procedure I have only one criticism. As I understood it, he did a post-colic anastomosis between the jejunum and the stomach and attached the transverse mesocolon to the jejunum instead of the stomach. I feel that in all anastomoses between the stomach and the small bowel the transverse mesocolon should be attached to the stomach and unless I can do that I should do an anastomosis anterior to the colon.

Dr. Lee did not mention the fact that when you divide the common duct you necessarily very materially disturb its circulation. If it is ligated the end of it may become necrotic; and some of the fistulae resulting at that point are due to necrosis of the common duct, particularly if the function of the anastomosis between the gall bladder and the bowel is in any way impaired.

I do not know much about the physiologic disturbances. I do know, however, that the digestion of protein and fat is affected. It seems to me that the first proteins fed to them should be protein that is split up as much as possible. We now have amino-acids available for oral administration, and they are also safe for intravenous administration. Fat can be almost wholly excluded from the diet, and that is important because fat delivered to the portal circulation through the liver is one of the causes of liver degeneration, due to retention of the fat in the liver cells.

I have used lipocaic but have not reached any conclusions as to its value. It has to be administered by mouth, so it would be necessary to have an indwelling tube passing down through the anastomosis in order to give the lipocaic during the early days post-operative.

The question of anastomosing the pancreatic duct to the intestinal tract is a very important one, as Dr. Lee has made clear. Unfortunately, it is an extremely difficult technical procedure; and I think it is open to doubt whether the secretion of the pancreas is delivered through those small ducts even after anastomosis is effected. It is easy to see that it might not function. In addition to the doubt of its functioning, it does add an additional hazard to the procedure—not in the length of time it takes to do it but in the danger of the development of an intestinal fistula from leakage at the site of the anastomosis.

Dr. Lee has done an extremely good job on this both from the standpoint of his operation and from his presentation of the subject. It was a great pleasure to hear him, and I hope he will have opportunity to do some more of these cases.

DR. J. SHELTON HORSLEY, Richmond: The report of Dr. Lee on "Partial Duodenopancreatectomy" is very interesting. This form of surgery will doubtless be used more frequently in the future. I wish to call attention to a case that I have previously reported elsewhere, but it involves a somewhat different method of approach.

The patient was white, male, age 60 years, who had intense jaundice and clay-colored stools. After the usual preliminary preparation, he was operated upon April 16, 1940. The gall bladder contained no stones. The duodenum was contracted and contained a small mass about the region of the ampulla of Vater which evidently accounted for the jaundice. The head of the pancreas was slightly infiltrated, but on the whole seemed rather favorable for resection. The portion of the duodenum along the head of the pancreas and the infiltrated part of the head of the pancreas were removed with the cautery. The end of the common duct was greatly dilated and poured out white bile. The pancreatic duct came out of the stump of the pancreas a short distance from the common bile duct and it was not dilated. The common duct was so enlarged that by cutting it slightly obliquely, an end-to-end union was made between the common duct and the lower stump of the duodenum with fine silk. The duodenum was further invaginated over the whole stump of the pancreas so the pancreatic duct could drain into the duodenum. The gall bladder was drained. The specimen consisted of a segment of duodenum measuring  $4\frac{1}{2}$  cm. in length, and attached to it was a portion of the pancreas. From the ampulla was a protuberance 1.5 cm. in diameter. Microscopic examination showed a tumor of adenomatous structure with some leucocytic infiltration and slight hyperplasia, but it was not malignant.

The patient stood the operation remarkably well and left the table with a pulse rate of 88. In the first 24 hours his convalescence seemed quite satisfactory. The secretion of urine, however, was failing. On the fourth day he passed only 15 c.c. of urine and died on the fifth day after operation.

Necropsy showed healing around the site of anastomosis in good condition. There was about 300 or 400 c.c. of

bile-tinged free fluid in the peritoneal cavity. There was no evidence of peritonitis or leakage of the sutures at any point. The kidneys were slightly enlarged and deeply stained with bile. Their surfaces indicated nephritis. The liver was enlarged. The lower lobe of the right lung was compressed and the lower lobe of the left was almost solid with what seemed to be hypostatic pneumonia. The patient died apparently of uremia.

While the indications for such an operation would be infrequent, it might be applicable in tumors of the ampulla of Vater or in cancer involving a superficial portion of the head of the pancreas. It has the advantage of preserving the external secretion of the pancreas and the pancreatic structure with lipocais, which tends to avoid liver damage such as fatty degeneration. (Dr. Horsley illustrated his discussion with lantern slides.)

DR. C. LYDON HARRELL, Norfolk: I feel rather incompetent in trying to discuss this subject after three master surgeons have discussed it. What I would like to know and what you would like to know, is, how we can recognize these cases early enough for surgery. I had one recently that I fell down on completely. I was called to see a patient around the first of August, who was a mechanical engineer, complaining of stomach trouble and pain in the lower left chest. He said, "Doctor, I am sick", and he looked sick. He was a white male, age 53. He was in a cold clammy sweat, with very rapid pulse ranging from 130 to 140, and temperature 99 degrees. Blood pressure 130/80. The physical signs were practically nil, except he had very slight tenderness in the upper left quadrant, slight dullness to percussion to the lower lobe of the lung with an occasional squeaking rale. The urine was negative; white blood count a little over 9,000. I watched him for two or three days, but, as he continued to get sicker and sicker, he was transferred to a hospital, where he continued to be extremely weak, with a cold clammy sweat, very rapid pulse, and temperature ranging from 101 to 102.

I learned that he had been seen by another physician in April or May of this year. He complained of stomach trouble at that time, but nothing was found wrong, including x-ray of stomach and chest. I called in one of our best consultants in the city, but we were unable to determine just what was wrong. We had an idea he might have miliary tuberculosis. He still complained of pain in his lower left chest at this time which was about six days after I first saw him, and numerous coarse squeaking rales were heard over the lower half of both lungs. X-ray of his chest at this time showed marked infiltration in the lower part of both lungs. He died in about a week from the time I first saw him, of what we

thought was congestive heart failure. He had been in an oxygen tent for three days, with stimulations, but with no results.

Autopsy revealed malignancy of the head of the pancreas metastasizing to the lower half of both lungs and the left suprarenal gland.

If this case had been recognized in the spring, surgery might have been of some help. I hope Dr. Lee, in his closing remarks, can enlighten us in the phase of this subject.

DR. LEE, closing the discussion: I should like to thank Dr. Williams, Dr. Horsley, and Dr. Harrell for their comments. Dr. Williams is correct in stating that this patient died from some physiologic disturbance. The manner in which he died had never been observed by any of us before. The entire change in his course from satisfactory to gradual decline and eventual death took place in twenty-four hours. He died of inanition, a gradual giving up of the entire body; but it was not shock or blood loss.

As I tried to point out, the question of whether a malignancy of the pancreas is present or not is a difficult one. Dr. Horsley's case is an example of this. On the other hand, if the lesion he removed had been a malignant one, his operation was not radical enough in that he did not remove enough of the surrounding structures. We have used up too much time already on this paper, or I would show my slides, in which I point out how much tissue should be removed. The diagrams will be included in the written report of this paper. I do believe it is recognized that unless the operation is done radically, it is better not to do it at all.

I am afraid that I cannot help Dr. Harrell very much. The diagnosis of carcinoma of the pancreas is extremely difficult, especially in the absence of jaundice. On the other hand, the malignant process has usually gone too far by the time the jaundice has developed. Dr. Brunschwig has recently reported six cases of total pancreatectomy for carcinoma involving the entire organ. The diagnosis can be made. If I may say that exploration for these vague cases, such as Dr. Harrell describes, should be done earlier than we usually do them, I trust I will be fully understood as to my meaning. I am not proposing unnecessary explorations, but I do feel that most of these cases are watched too long, even on the various services of our best clinics.

We are now at the beginning of finding something really valuable in surgery of the pancreas, and sooner or later we will overcome the mistakes we may be making now.

Thank you very much.



## PLANNED PARENTHOOD

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Birth control has been the subject of controversy at times during the past several centuries. Malthus, 1798, made an extensive study of population economics and recommended birth control as an answer. He failed to take into consideration the devastation of war, disease, maternal and infant mortality, and pestilence, which at times have contributed to depopulation.

Not many years ago, this movement was under the influence of laymen who used widespread propaganda without purpose except birth control itself. It is not surprising that under these circumstances the medical profession looked with disfavor upon it. It has been under the ban of the law of the land.

Many forward-looking citizens have seen in it, not a means of limiting the population, but of increasing the quality of the individuals constituting the population. They have considered the possibility of reducing the number of defectives, the criminal population, the feeble-minded, and the hordes who are now a burden to the state and who must be supported by those who must carry on. It is concerned in the development of larger families who have not necessarily large means to hand down, but character and health. It undertakes to aid in decreasing useless maternal and infant mortality. It plans to do this by making it a part of preventive medicine. It is on this basis that the Virginia League for Planned Parenthood was organized. In this light the medical profession, as represented by the state and national organization, has recognized and adopted it as a part of its activity.

When this organization emerged from a contraceptive clinic alone to the League for Planned Parenthood, it assumed many new obligations which could not be avoided.

It was inevitable that some indications and contraindications for birth control be recognized and defined. These limitations are now fairly well agreed upon. The role of contraception as a preventive of unnecessary maternal deaths is now well known to doctors, but these truths must also be known to the people and become part of general education if justifiable results are to be obtained. It has been estimated that the elimination of pregnancy in the unfit

would reduce the maternal mortality almost one-fourth. It is gratifying to know that the mortality rate is now one-third of that of ten years ago. It is not unlikely that this organization has contributed to this improvement. There are a number of conditions which render prospective mothers unfit. Repeated toxemias stand at the head of the list. There are certain types of this condition which add little to the risk but some others which justify the prediction of almost certain death. Unfortunately, many of these are only seen by the doctor when a fatal result may be inevitable.

**GREAT MULTIPARITY.** The risk of pregnancy increases definitely after the fifth pregnancy. This does not mean that no one should have more than five children, but most people should not. If pregnancy is undertaken, it should be done only after the most careful examination and consideration of all factors influencing the health of the patient. Unfortunately, changes in the heart, kidneys and blood vessels will often be found. Tuberculosis, diabetes and heart disease call for special consideration in a given case. Mental disease may contraindicate reproduction. It will be seen that there are a considerable number of conditions which may contraindicate pregnancy. When the contraindication is proven to be permanent, sterilization by tubal separation is advised. There can be no doubt that too frequent childbearing is at times a handicap which few women can withstand without detriment to the health of the mother and the children. Some recent publications would seem to suggest that this danger is not as great as was formerly believed to be the case, but, regardless of this, the facts are difficult to overcome. The injury may come as much from the care of the children as from actually having them.

Abortions, mostly criminally induced, are responsible for a large number of maternal deaths each year. Authorities estimate that four-fifths of all criminal abortions are of married women with children. This problem is so clearly associated with crime of various types that any successful method of prevention is most difficult and discouraging. It is obvious that planned parenthood, rather than unwanted pregnancies, should reduce this terrific loss

of life and vast injury to health of individuals which often results in partial or complete invalidism.

I have seen only one or two women who said they never wanted children. Practically every woman wants children sometime, but only too often the prevention of pregnancy may prolong itself into permanency. This is evidenced by the fact that a large proportion of the women who consult gynecologists come for relief of sterility. Only about half of these can hope for success. Relief is in inverse proportion to the duration of the sterility. This knowledge should be a part of your propaganda. Certainly every doctor giving premarital advice should inform the woman of this.

This organization might well consider the positive side of the question as well as the negative. It is the prevailing, and I might say, the understandable desire of newly married women to avoid pregnancy for a time. It is not unusual for this plan to be encouraged by the woman's parents who personally wish the condition to be one of long standing. It is almost unbelievable the powerful influence that a dominating selfish mother can exert, but the perpetuation of this early sterility cannot be entirely blamed on the mother. The newlyweds may wish to pay off some previously acquired financial obligation. The economic situation will always influence the willingness to have children. This leads us into the consideration of economic problems far beyond our ability to cope with. In many cases, it is not a real economic problem at all, but undue concern for the future or possibly a greater desire to spend for other things than the needs of a baby which is not yet seen.

Perhaps some future administration can find a way to give us all absolute security, but until that time, these real problems must be faced. The question arises: Would the disappearance of these and other anxiety problems make the race stronger and more self reliant, or less efficient?

Some women who have one child do not want another on account of the pain of childbirth. This is largely a concern of the medical profession. I feel that it can be rather definitely stated that there are methods and ways of relief which are usually satisfactory if fitted to individual needs. The lay press has at times done much harm by advocating one method or another and causing the individual patient to demand some method whether it is suitable for her or not. The relief of pain in childbirth

is, and will continue to be, important.

**THE PREVENTION OF CRIME.** Criminology presents many features of interest, particularly as to the causes of criminal tendencies and viciousness. These have widely branching roots which feed upon bad heredity and environment and many other evil influences. Excessive multi-parity in a family whose heads are not too well stabilized and who cannot really give the children the necessities of decent living may and do contribute considerably to the crime problems of the country.

Several years ago, I was the victim of a petty larceny. The culprit, a boy of about ten years, was found to be one of ten who had been delivered in our own maternity clinic. Investigation showed that he was an habitual criminal, as were also the other nine. We had been very successful in saving the lives of the mother and children, but the result had been disastrous to these very individuals whom we supposed we had benefited. A social worker, to secure the information about such a family, and a contraceptive clinic might possibly have contributed to the prevention of crime.

This brings up the question of juvenile delinquency which is crime in the making and furnishes an apt illustration of the need for cooperation of various organized agencies, each contributing its part to a common purpose.

While we may have no illusions as to a super race, it would seem to be suitable that every influence of such an organization as this should be used to produce normal children, mentally and physically, who would be expected to develop into a better and happier race. Successful prenatal care is important, and has a direct relation to maternal and foetal mortality, and also on the future lives of the individuals. Certain features of this are not well known and I regret to say, have not been given very much consideration by even the leaders in the profession.

It has been rather definitely shown that a woman smoking during pregnancy exposes the embryo to the poison of tobacco. I have seen no denial of this. The only controversy has been as to the amount which reaches the embryo, and some have expressed the belief that this amount was too small to be injurious. This has given great comfort to those who elect to smoke. By animal experimentation, it has been observed that many litters are born dead after being exposed to an amount of tobacco smoke comparable to that absorbed by a woman smoking a

pack of cigarettes daily. This suggests smoking as a cause of so-called spontaneous abortions.

I do not know of any recorded observations as to the facts here. I am at present making observation which, when sufficient numbers have been recorded, may give some information on this point. It is agreed that if the foetus goes on to maturity, it is really an addict when born. This addiction is continued if the mother should nurse the baby, as the poison is secreted in the milk. Certainly, this is not a promising outlook for a baby. It may be a generation before the full results of this are known. It is astonishing that any woman would knowingly do such a thing to her own baby. It may be well to note that most of these women are not the underprivileged, ground down by poverty and bad environment, whom we are advising not to have too many children. I believe that most of the women

to whom I have given this information have desisted from smoking, at least during pregnancy and lactation.

A casual consideration of the conditions recalled here and many others which might be mentioned lead us to the unmistakable conclusion that there is much that is wrong which needs to be cured. Any real need may be partially relieved when its presence is recognized, but the real answer is education. The clinics which have been established under the direction and stimulation of the League have been most effective, but the most valuable feature of this activity is education. The Virginia League for Planned Parenthood has already done much to accomplish the purposes for which it was organized, but the future need is great. . . . "Where there is no vision, the people perish" (Proverbs, 29:18).

*Medical Arts Building.*

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### Rehabilitation of Europe's Victims Offers Study of War Edema.

An opportunity to study the problem of famine or war edema is afforded in the rehabilitation of European countries, *The Journal of the American Medical Association* observes in its May 19 issue. This edema is one of the results of starvation. It is manifested by excessive accumulation of fluid in tissues, with swelling usually in the legs and is widespread during war and famine. Until recently, *The Journal* says, biochemical and nutritional knowledge has been inadequate in determining a more specific cause than nutritional deficiency. The efficacy of high protein foods is generally acknowledged as causing the edema to disappear. The lowered serum proteins present in this disorder indicate a depletion of protein reserves of the body which must be restored before cure can be effected. *The Journal* points out that results so far in trying to relieve nutritional edema by administration of B complex

vitamins are conflicting, and the preponderance of evidence points to the dominant role of protein in the causation of this type of edema.

### Civilian Blood Donor Program by Red Cross.

The war has so strongly emphasized the vital place in medical practice of blood and its derivatives, that American Red Cross Chapters throughout the nation have been given permission to recruit blood donors for civilians. With the exception of the eleven metropolitan centers where the Red Cross is now recruiting donors for the Army and Navy, any Red Cross chapter may take part in operating a donor center for civilians, *sponsored by a recognized medical or health agency*. The blood collected and its derivatives produced will be made available without cost to physicians, hospitals, clinics and patients.

Further information with regard to this program may be obtained from the five Red Cross area offices, or from National Headquarters, Washington 13, D. C.



## INDICATIONS FOR TERMINATING PNEUMOTHORAX TREATMENTS\*

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It is said that in pulmonary tuberculosis "pneumothorax is the treatment of choice but, if ineffectual, is more of a liability than an asset". And, may I add, that in the average case where collapse is effectual, if pneumothorax is continued too long, the physician becomes more of a liability to the patient than an asset.

Of the various methods of collapse therapy in use now, such as intrapleural pneumothorax, extrapleural pneumothorax, oleothorax, thoracoplasty, phrenic nerve operations, and pneumo-peritoneum, the simplest type and the first to be recommended in most cases is intrapleural pneumothorax. In any sanatorium a large percentage of its patients are given this method of treatment. This number may reach 65 per cent and higher. The very popularity of this method of collapse therapy does not mean that it is without hazards. It should not be pursued indefinitely in the uneventful cases, nor continued in those cases where the desired result is not being accomplished. The major desire on the part of the physician and the highest hope of the patient is ultimate cure. To accomplish this end pneumothorax must render the patient non-toxic, non-infectious, and at the end of the course of treatment there should be in use as much normally functioning lung tissue as could be expected after the healing of his particular type of lesion.

Any method of treatment of tuberculosis which has reached such a peak of popularity must, in most cases, be one which has proved successful in its end results—

1. By having the least number of hazards;
2. By shortening the tedious period of bed rest;
3. By rendering the patient non-infectious and non-toxic;
4. By healing the lesions satisfactorily with little discomfort.

With such results possible, intrapleural pneumothorax treatment is undertaken in suitable cases, keeping in mind that the individual patient stands alone in the problems he offers.

INDIVIDUAL FACTORS INFLUENCING  
TERMINATION

The length of the course of treatment of each patient will have to be determined by a number of individual factors which control the response to treatment. These factors are:

1. The type of lesion which appeared on x-ray films at the beginning of the treatment;
2. The individual type of collapse assumed by the lung and the time of complete or satisfactory collapse of the diseased area;
3. The date that all toxic symptoms disappeared;
4. The date of the last finding of tubercle bacilli in the sputum or gastric lavage;
5. A normal blood picture with a normal sedimentation rate is desirable;
6. A cooperative attitude on the part of the patient is important during treatment and also his economic status in so far as it controls his living conditions.

Considering the number and the variety of factors influencing the course of treatment, it is necessary to note their influence on the decision to terminate pneumothorax. We find that regardless of such a choice method of treatment that there are undesirable as well as desirable reasons which call for termination.

UNDESIRABLE REASONS FOR TERMINATING  
PNEUMOTHORAX

When undesirable reasons arise which render the further persuance of this procedure unwise because all signs point to the fact that proper results are not being attained, it is clearly indicated that pneumothorax treatments should be terminated. Among these undesirable reasons can be listed:

1. Sputum remains positive;
2. X-rays show pulmonary lesions insufficiently collapsed;
3. Toxic symptoms remain present.

There are also failures in treatment necessitating the termination of pneumothorax which are due to inadequate collapse of the diseased lung or complications arising in the course of treatment. Inadequate collapse may occur because of obliterative

\*Read before meeting of the Society of Chest Physicians of Virginia, at Richmond, May 29, 1944.

pleuritis closing the air space or the presence of adhesions which are not suitable for treatment by pneumonolysis. In the case of obliterative pleuritis the termination of pneumothorax is involuntary but in the case of the adhesions, termination is voluntary and in favor of surgical treatment or prolonged bed-rest.

Reasons for terminating pneumothorax may be due to undesirable conditions which are caused by complications arising in the course of treatment, such as:

1. Contralateral spread of the disease in a patient not suitable for bilateral pneumothorax;
2. Persistent pleural effusion or empyema—either tuberculous or mixed infection;
3. Sudden abrupt re-expansion of the lung;
4. Spontaneous collapse of opposite lung;
5. Dyspnea due to the patient having cardiovascular insufficiency;
6. Failure of cavity to close, or continued enlargement of a cavity;
7. In some cases of endobronchial lesions where partial obstruction is taking place.

You will note that in all of the reasons given for undesirable causes for terminating pneumothorax it was impossible to foretell these happenings because they were only revealed by trial treatment and, therefore, they are possible even in the most carefully selected cases. Within this same group of cases may be emphasized, particularly in the ambulatory clinic patients, some of those who are behavior problems in that they cannot or will not cooperate fully. This results in infrequent refills causing premature re-expansion or inadequate collapse because of failure to accept supplementary treatment, such as thoracoscopy and thoracentesis. Often these cases are unsuitable for treatment outside of a sanatorium but have left the sanatorium against advice and refills are continued at the clinic with the hope of holding down some of the toxic symptoms and expectoration as a protection of those with whom they come in contact.

#### REQUIREMENTS FOR SATISFACTORY TERMINATION OF PNEUMOTHORAX

Fortunately, the larger percentage of pneumothorax cases treated in sanatoria and passed on in good condition to the private physician or to the ambulatory pneumothorax clinic do follow a successful course of treatment and reach the time that

termination of the pneumothorax treatment is warranted. The termination of pneumothorax should be carefully considered if the patient's condition fits the following requirements:

1. That sufficient time has elapsed for the healing of his particular type of pulmonary lesion. (There are a variety of opinions as to the time required for healing different stages of the disease. The individual response to treatment will, again, play a prominent part). It has been suggested that the time limit for treatment be two to three years if the lesion is light infiltration without cavity; at least four years if the lesion is heavy consolidation with or without walled-off cavities; and between four and six years if there is dense fibrocaseous disease or cavity with thick walls.
2. These stated periods of time must be measured from the date that:
  - a. the last positive sputum was found or last gastric lavage was positive for tubercle bacilli;
  - b. the chest x-ray showed effective collapse of the diseased area;
  - c. the last toxic symptoms were present;
  - d. complications were cleared up.

Therefore, each patient offers individual responses which influence the decision to terminate pneumothorax.

#### METHOD OF TERMINATING PNEUMOTHORAX

The method of terminating pneumothorax is to give less frequent air refills; to fluoroscope patient often and re-x-ray whenever the lung has re-expanded to a degree that enables further study of the collapsed area of disease. Patients are advised as to a suitable rest schedule, proper exercise, and to keep a careful record of any recurrent symptoms. In some cases phrenic crushing is advised when the lung is re-expanded as a possible aid in preventing negative pressure symptoms with the tendency to effusion and shifting of the mediastinum. However, there may be some disagreement as to the advisability of this because paralysis of the diaphragm has a tendency to interfere with the emptying of the bronchial secretions that may accumulate.

In considering whether termination of pneumothorax treatments is advisable for certain patients of the lower economic status, rehabilitation programs are of great value in that they prepare these patients

for suitable occupations which enable them to make a living without further endangering their health.

#### CHART I

Re-Expanded Pneumothorax (14 Cases from One of the Ambulatory Clinics, 1943-1944 Records—12 months)  
Anti-Tuberculosis League Clinic—Norfolk, Va.

A. Voluntary re-expansion .....	5
Results: Good .....	4
Poor .....	1
B. Involuntary re-expansion .....	9
1. Premature re-expansion .....	5
due to:	
a. pleural effusion .....	3
b. obliterative pleuritis .....	2
2. Ineffectual collapse (surgery advised) .....	1
3. Bilateral uncontrolled disease .....	2
(one thoracoplasty—dead)	
4. Tuberculous empyema .....	1
Oleothonax followed by thoracoplasty	
(good result)	
C. Number with sputum converted .....	11

#### PNEUMOTHORAX TREATMENTS OVER AN INDEFINITE PERIOD

The question arises as to whether there are any cases which should be continued on pneumothorax indefinitely. We know that in certain elderly or

#### CHART II

Re-Expanded Pneumothorax (13 Private Cases)

A. Voluntary re-expansion .....	9
Results: good .....	9
poor .....	0
B. Involuntary re-expansion .....	4
Results: good .....	3
poor .....	1
1. Premature re-expansion due to	
obliterative pleuritis .....	2
a. lesion healed .....	1
b. return of symptoms .....	1
(readmitted to sanatorium)	
2. Ineffectual collapse .....	2
a. thoracoplasty—good results .....	2
C. Complications .....	6
1. Small pocket of pleural fluid .....	4
2. Dyspnoea—slight .....	2
D. Type of lesions represented	
1. Infiltration .....	3
2. Fibrocaseous .....	2
3. Infiltration with cavity .....	8
E. Sputum converted .....	12
by pneumothorax .....	10
by thoracoplasty .....	2

debilitated individuals, whose disease is kept comfortably under control by pneumothorax treatments, and who have no chance of completely healed lesions,

treatments should be continued indefinitely. Also those patients who are improved by this treatment, even though it may be inadequate for cure, and who are physically unable to undergo surgical treatment, should be continued on pneumothorax. These latter individuals may be those with a tendency to pulmonary hemorrhage or who have large cavities with fibroid walls, or those with spreading disease.

Since the ultimate aim of artificial pneumothorax is toward eventual termination of all treatments with healed disease as a result, it behooves the physician who administers pneumothorax to keep uppermost in mind that he is not only administering treatments for a good purpose but that he is carrying out a form of treatment that predisposes to certain hazards. Of course, in some individual cases the physician will have to decide whether the hazards of terminating are greater than the hazards of continuing treatment. This decision will not so often be difficult if, while treatments are carried on, he keeps in mind the stage of the patient's progress and satisfactory response by using as a "measuring stick" those stated factors in each case which influence the decision to terminate pneumothorax, and noting the time that has elapsed since the date of effective treatment. If the patient is a suitable case, then re-expansion should not be delayed.

#### HAZARDS OF CONTINUING PNEUMOTHORAX INDEFINITELY

The physician should not overlook the fact that by continuing unnecessary treatments he may be causing the patient to face the possibility of certain recognized hazards, however remote he may consider them thus far. These hazards may be of three types:

1. The hazards which may arise during the actual giving of a treatment, such as air embolism, drug toxicity, spontaneous collapse of opposite lung, pleuro-pulmonary puncture, too high intrapleural pressures, and herniation through the mediastinum.
2. The hazards of complications arising during the course of treatment, such as: effusion, empyema, intercurrent disease rendering it unwise to continue treatments.
3. The hazards due to conditions which follow too prolonged treatments and which become apparent only during the re-expansion program, such as: the risk of an un-expandable lung due to:



1. Massive parenchymal fibrosis;
2. Bronchial stenosis;
3. Broncho-pleural fistula;
4. Visceral pleural thickening because of long standing pneumothorax or hydropneumothorax, with adhesions fastening the lung down;
5. Dangers connected with dead pleural space, such as pain, dyspnea, or circulatory hazard caused by displacement of mediastinal structures;
6. Bronchopleural fistula with empyema;
7. Atelectasis from bronchial stenosis which may be followed by bronchiectasis.

#### PATHOLOGY OF THE ARTIFICIALLY COLLAPSED LUNG

The recently reported results of post-mortem findings by Dr. Robert Charr and Dr. J. Woodrow Savacool<sup>1</sup> on cases with pneumothorax treatments over varying periods of time support the idea of the necessity of terminating these treatments in suitable cases and in those unsuited to this form of treatment within a reasonable length of time. A certain amount of irreparable damage may result from unnecessarily prolonged treatment. Their findings, namely, "pleural reaction, bronchial narrowing, vascular sclerosis and parenchymal changes noted in these cases were apparently the combined results of tuberculosis and collapse therapy". Also, so-called selective collapse appeared to them to be "essentially a phenomenon of atelectasis". Some showed cavitation had developed in the center of this collapsed lung. Others showed the main pulmonary artery, leading into the collapsed lung, had undergone thrombosis. These cases with thrombosis had had accompanying symptoms of spontaneous pneumothorax or of coronary artery occlusion. In another case the indications were that branches of the intercostal vessels apparently supplied the parietal portion of the adherent cavity walls and separation resulted in sloughing of the outer cavity wall when separated from its blood supply in the chest wall.

1. Collapsed Lung—Post-Mortem Findings. Robert Charr, M.D., and J. Woodrow Savacool, M.D., *Diseases of the Chest* **10**:2, 103, March-April, 1944.

Because of these pathological findings I feel that a greater amount of normal lung tissue is preserved when pneumothorax treatments are terminated within a reasonable period of time.

#### SUMMARY

Artificial intrapleural pneumothorax treatments have increased in popularity because of relative simplicity of the treatment and the usual good results that are obtained. Indications for terminating these treatments have been reviewed.

There are, in most cases, clear cut requirements to be met to determine the good progress of treatment, and in some cases certain complications are definitely against getting results by this method of treatment.

There are acceptable periods of time for the healing of the average case determined by the type of lesion present at the beginning of treatment and the date of effective collapse with disappearance of symptoms.

There are recognized hazards to giving treatments, and additional ones to continuing pneumothorax indefinitely. There are a few cases in which indefinite treatment is acceptable.

There are pathological changes as a combined result of collapse treatment plus the type of disease process present. There is reason to believe that most of these are less marked when treatment is terminated within a reasonable time after healing is believed to have taken place.

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## FINDING EARLY TUBERCULOSIS\*

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That the majority of tuberculous patients are moderately or far advanced when admitted to sanatoria for treatment, is a well accepted fact by all engaged in this specialty. This has been noted by the writer in several states where he has worked, regardless of their location and their organization to combat tuberculosis.

Earlier diagnosis is essential to lower the morbidity and mortality rates of tuberculosis, and to reduce the period of sanatorium treatment.

General medical practitioners are the front line troops in the fight against the great white plague, which, contrary to all propaganda, is still our worst killer of persons between the ages of 18 and 35. The general physician should always suspect its presence and utilize all diagnostic procedures available for each patient under observation.

This can be accomplished by annual surveys of high school children and their teachers, factory workers, employees in every line of business, and the professions, including all contacts exposed to active cases of the disease. The annual early diagnosis campaign of the National Tuberculosis Association also discovers numerous active cases throughout the nation.

### X-RAY IS ESSENTIAL

X-ray of the chest is considered the most important factor in making an early diagnosis of pulmonary tuberculosis, regardless of the findings on physical examination. Each person suspected of having the disease should be x-rayed on the first visit to the physician's office or clinic. For this purpose the standard size 14x17 inch celluloid or paper films are considered more reliable than the 35 mm. or the 4x5 inch photofluorographs. However, if the microfilms are the only ones available, they should be used by all means.

### X-RAY OF STUDENTS' CHESTS

All first-year high school students should be x-rayed as a routine precaution at that critical period of adolescence with the mental and physical strain of study, athletics, and social activities now con-

sidered so necessary to development.

All college students should be required to undergo a complete physical examination, including chest x-ray films, upon entering their freshman year, and repeated whenever necessary. Another complete examination, with chest x-ray, should be done just prior to graduation from college and beginning life's work in various occupations.

### WRONG DIAGNOSES

This writer has been impressed by the number of new admissions to sanatoria with far advanced pulmonary tuberculosis who have been under treatment for months or years for so-called gastritis, enteritis, sinusitis, tonsillitis, laryngitis, bronchitis, asthma, otitis media, and recurrent attacks of pleurisy, grippe, or pneumonia.

Patients frequently give this experience in their histories, and quite a large percentage state that tuberculosis was not diagnosed until they went to a tuberculosis clinic or a hospital and were x-rayed as a routine procedure.

It would appear that all general practitioners and specialists in any medical or surgical field would at least be on the alert always to suspect the presence of tuberculosis in any of the conditions noted above, and determine definitely whether or not tuberculosis is the cause by having a chest x-ray, sputum examination for TB bacilli, etc., made on the first examination of the patient.

A diagnosis of pulmonary tuberculosis and any of its complications would greatly aid the physician and the patient in their efforts to plan a program of treatment and make all necessary family, business, economic, and financial arrangements which are so essential to the welfare of the sick person and his relatives.

### INDICATIONS FOR CHEST X-RAY

Certain characteristics of tuberculosis must be kept in mind to appreciate the indications for chest x-ray, namely, that the disease at its onset is frequently without symptoms, that early lesions and some moderately advanced produce few or no abnormal physical signs, and that the extent and character of the

\*Submitted for publication February 12, 1945.

lesions are often different from what would be expected from other studies of the case.

According to modern practice, therefore, x-ray examination is indicated in patients who present symptoms of the disease, and in certain healthy people who may be selected.

#### PATIENTS WITH SYMPTOMS

Since physical examination may be quite inadequate to reveal the pulmonary pathology, x-ray films of the chest should be made of anyone who presents suggestive symptoms. This includes patients with chronic cough, hemoptysis, pleurisy, and unexplained impairment of the general condition as indicated by loss of weight, undue fatigue, afternoon temperature of 99 to 99.6, and functional disturbances such as anorexia, nervousness, and indigestion.

Any extra-pulmonary tuberculous lesion always demands x-ray of the lungs as the source is usually found there. It is the usual experience that patients who report to a doctor because of symptoms of illness have moderately or far advanced pulmonary tuberculosis when x-rayed as a routine procedure.

#### APPARENTLY HEALTHY PEOPLE

About 1 per cent of apparently healthy people have shown tuberculous lesions when surveyed by x-ray. More than 80 per cent of these are in the minimal stage of the disease. The advantage of this is obvious. Certain groups of the population are usually selected for such surveys and include the following:

1. All volunteers and selectees for the armed forces of our country.
2. Persons who have been exposed to TB, such as hospital personnel, and all contacts with known cases of the disease.
3. Adolescent children and young adults who react to tuberculin, and those in contact with a tuberculous patient.
4. High school and college students, as they represent the age when active pulmonary tuberculosis often is first discovered.

5. Pregnant women as a part of the prenatal physical examination.

6. All industrial workers when first employed and annually thereafter.

#### HOME TREATMENT

Worthy of comment, also, is the rather frequent advice to tuberculous patients to "take the cure at home". This is, of course, almost impossible due to the activities of the family, inquiring neighbors and visitors, telephone and door bells ringing, etc. Moreover, no tuberculous patient with positive sputum should remain at home where he is a constant source of infection to his family and friends, in short, a public menace to the health of the community.

#### TUBERCULOSIS CONFERENCES

A plan, with the purpose of interesting general medical practitioners in the early diagnosis and treatment of tuberculosis in their patients, is worthy of trial in any community as it has been effective in several places and operates as follows:

Monthly clinical conferences are held in the Medical Society building to which all local medical practitioners are invited to bring the data of any patients who present difficulties in diagnosis and treatment, and in whom tuberculosis is suspected or definitely diagnosed.

Each conference is conducted as a round-table discussion, and the attending specialists who are present will render advice to the physician to help solve the problem his patient presents, after all data and findings have been considered by the various specialists on the panel.

This is considered one of the most promising developments in the campaign against tuberculosis in recent years, and it is hoped will serve as an incentive to other communities to increase the interest of general practitioners, for in their hands largely depends the ultimate solution of the tuberculosis problem throughout the United States.

*2803 Erie Street, S. E.*



## CASE REPORT OF MATERNAL DEATH

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MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

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This twenty-nine-year-old colored woman was admitted to the hospital December 3, 1941, because of pregnancy, near term, not in labor, complicated by a severe toxemia (unclassified). L.M.P. April 8, 1941. At term January 15, 1942; G IV, P IV (one set of twins).

Present pregnancy was uneventful until two weeks before admission, when she started vomiting. She had had a bad cough after a cold for three weeks. This persisted and she developed dizziness and scotoma. She was in bed for a week before admission. On day before coming to the hospital her blood pressure was 190/130. There was 4 plus albumin in urine and oedema of legs. There had been no prenatal care.

Examination on admission revealed an obese colored female—weight 300 plus pounds, with uterine pregnancy near term. Not in labor, T. 98.6, P. 80, BP 254/160. No heart murmurs heard, and rate and rhythm were regular.

Laboratory studies showed 1-plus albumin and a few granular casts in a catheterized urine specimen. RBC 2,420,000; Hbg. 50 per cent; WBC 9,850; Uric Acid 6.2 and a total protein of 5.8. Kline was negative. Electrocardiogram revealed auricular extrasystoles and evidence of auricular damage; sclerosis of retinal arterioles present.

It was thought by medical consultant that patient had a hypertensive cardio-vascular disease rather than an acute toxemia and that pregnancy should be terminated.

Four days after admission her BP was 170/120. The membranes were not ruptured but were stripped from lower uterine segment and medical induction started. Two days later she delivered spontaneously a first twin as breech. The second was in a transverse presentation and was delivered by a version and extraction. Excessive bleeding followed this delivery, but checked after prompt manual removal of placenta.

Patient's postpartum course was satisfactory until fourth day when temperature was 102.6 and continued 102 and 103. Sulfathiazole started; four days later sulfathiazole level was 9, and NPN was 108 mgm. per cent, so sulfathiazole was stopped. Urine was clear. Aerobic and anaerobic blood cultures were negative. She died ten days postpartum. Permit for autopsy could not be obtained.

The cause of death is not clear, but it looks very much like a puerperal infection.

## COMMENT

This case has been classified by the Committee as a preventable obstetrical death because of the absence of prenatal care, and no medical care until near term. The blood findings would have suggested transfusion early. Due to her hypertensive cardiovascular disease, she should never have been allowed to become pregnant. It would have been well to sterilize her after her last pregnancy. If not, pregnancy should have been terminated as early as possible. It is entirely too dangerous for women with hypertensive cardio-vascular disease to have children.

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Control of Rabies in Dogs.

Rabies in dogs can be controlled by quarantine and by immunization against the disease through a single injection of the vaccine, *The Journal of the American Medical Association* for April 28 reports. *The Journal* says that experiments now have established that the single injection of an antirabic vac-

cine produces a high degree of immunity in the dog.

"An effective program to control canine rabies," *The Journal* states, "must include quarantine to prevent the spread of the virus by stray dogs and dog traffic. There seems to be no question that canine rabies can be controlled by means of quarantine and vaccination. . . ."

## PUBLIC HEALTH

I. C. RIGGIN, M.D.,  
*State Health Commissioner of Virginia*

The report of the Bureau of Communicable Diseases of the State Department of Health for June, 1945, as compared with the same month in 1944, and for the period of January through June, 1945, compared with the same period in 1944, follows:

	June 1945	June 1944	Jan.- June 1945	Jan.- June 1944
Typhoid and Paratyphoid Fever	22	9	45	53
Diarrhea and Dysentery-----	562	638	1583	1535
Measles -----	116	946	1185	16655
Scarlet Fever -----	241	102	2542	1850
Diphtheria -----	16	13	133	117
Poliomyelitis -----	15	8	30	14
Meningitis -----	21	27	164	404
Undulant Fever -----	2	8	11	26
Rocky Mountain Spotted Fever	11	14	18	20
Tularemia -----	6	7	23	28

PROTEIN IN THE DIET DURING PREGNANCY  
 AND LACTATION

It has been known for a long time that for growth protein is the most important of the food elements. Many studies have shown that an increase in the amount of protein is needed during pregnancy. Even though this is known, too often the pregnant woman does not get sufficient protein in the diet. Only during the past few years has it become customary for physicians caring for pregnant women to stress the importance of increasing the amount of protein during the pre-natal period.

In a study made in New Orleans of a group of 225 women, a "dangerously low intake" of protein was

found. Their results showed a lower average hemoglobin and serum protein, a higher incidence of toxemia, a strikingly higher incidence of oedema, increased maternal morbidity, and increased fetal mortality on diets poor in protein. The authors state no definite conclusions can be drawn without further investigation. Studies at Harvard indicated that less than 75 grams of protein daily was likely to result in an infant most likely to receive a low pediatric rating.

In a recent article released by the associate in nutrition at the Harvard School of Public Health, it was stated that "if allowances of protein suggested for pregnancy by the National Research Council are to be met in the diet, there must be adequate education of women in regard to this nutrient. Nutrition histories reveal that the wife eats normally a diet supplying less protein than her husband or children. If, for economic reasons or other reasons, the family food supply is limited in such foods as milk, eggs, lean meats, she tends to give them to the other members of the family, and go without herself. Too frequently, she doesn't care for milk or eggs."

Physicians must continue to educate the general public that the commonly accepted belief of many years ago (that protein should be reduced) is erroneous. Every effort should be made to give correct advice to the pregnant and lactating woman to help her alter her food habits to conform to the newer knowledge of nutrition.

### Bedside Dentistry in Army Hospitals.

A portable dental unit is being used in certain Army hospitals to assure bedridden patients more complete dental care and speed convalescence. Plans are now under way to standardize this unit for all Army general hospitals here. According to the Office of The Surgeon General this "dentist's office on wheels" carries equipment for a wide variety of den-

tal operations from simple dental prophylaxis to treating fractured jaws and making complete new dentures.

A recent report on the portable dental unit at Kennedy General Hospital, Memphis, Tenn., lists 363 dental treatments given in one month to bed patients there.

**WOMAN'S AUXILIARY**  
to the  
**MEDICAL SOCIETY OF VIRGINIA**

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### A Tribute to Our Doctors.\*

May we do honor to our doctors; not because we are the wives of these men, but because we know as no one else the lives of service and quiet self-sacrifice that they lead. The physicians' oath is not an empty form and rare indeed is the man of this profession who does not consider himself as consecrated to his work as any priest or minister.

Many unsung heroes have died for the advancement of the science of medicine; many saints have walked this earth in the dress of the old family physician with his black bag out of which came everything from babies to solutions for family quarrels. Many such men are still among us today answering anxious calls at midnight or at dawn, never too tired, never too absorbed in their own affairs to respond to that age old cry: "Get the doctor."

We assume burdens of anxiety and worry over dangerously ill patients in our attempt to lighten the burden on the physician's shoulders and show him sympathetic interest. Although not mentioned nor implied in chronicles, the wife is the Mirror Goddess of the physician's life, reflecting and directing his earnest, humble effort to be serviceable to his fellowman which makes of every doctor a Great Man.

Florence Fisher Parry, of Pittsburgh, in paying tribute to the doctor says:

"Nothing can take his place—not priest nor minister, nor all the clinics that science can provide. There is a rapport and a confidence between him and his patient which has been able to accomplish miracles and restore to the breasts of mothers babies about to die; and to the arms of lovers, beloved turned back from Death. For there's something about the *Family Doctor* that casts out fear, meets

apprehension, breaks down suspense, performs the simple miracle of Faith. We know how hard the life he has chosen. We know that he's abused, imposed upon and worn. His days are not his own and his nights are snatched and torn. What compensation is his? Oh, I think he is greatly repaid; greatly to be envied. His rewards are kingly prizes. The prize is WELCOME. That's a great reward. To have one's presence a blessing. To know that the mere sight of you brings heart's ease; stirs the wan pulse, brightens the fading eye. The prize of CONQUEST. All men like that. Winning against odds. To stay a fever; energize a pulse; throw breast-works against the advance of disease. Here, indeed, are paths of glory that do not lead to the grave but far from it. I cannot think of greater conquest. The prize of CONFIDENCE. That's a proud possession. Some priests know it; some ministers and friends, if they're time tried. But the *Family Doctor* is the final confessional, a refuge not only for repentant hearts but sick and craven hearts as well. The prize of HUMAN WISDOM that deep knowledge that comes from being continually exposed to the pitiful frailties of mankind. You do not deceive the *Family Doctor*; you do not attempt to. But knowing you, he is still compassionate; for he has learned to expect little greatness in his fellowman. Above all, I think I envy him his prize of SELFLESSNESS. He is free, for he has already given up his life, so has nothing left to fetter him. There is much talk of state control of medicine; and legislation dips its partial fingers into the sterile waters of our doctors seeking to arbitrate over their fields of mercy. I DARE SAY there are certain restricted fields of medicine in whose confines the legislative hand could work productively. But the ineffable value of the HUMAN TOUCH in medicine is something that transcends all legislation. What legislation indeed, what politics, what state control or organized social program can hope to substitute that HUMAN BOND that exists between the *Family Doctor* and his patient?"

GRACE E. THOMAS,  
(MRS. DAVID W.)

*President, Woman's Auxiliary to the A.M.A.*

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\*From Bull. Woman's Auxiliary to A.M.A.



# VIRGINIA MEDICAL MONTHLY

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(Founded by Landon B. Edwards, M. D., April, 1874)

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*Editor Emeritus*

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*Editor*

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### Appeal for Release of Medical Officers Not Needed by Armed Forces

THE shortage of doctors for civilian practice is becoming acute. People are having more and more difficulty in getting a doctor when they need one. It is not a question of money, for the wealthy are having as much trouble in this respect as anybody. They are using their positions on hospital boards in efforts to find a doctor who has time to pay a house call. That the situation will become worse stands to reason. At the beginning of the war the old and the physically handicapped physicians were left for civilian practice. Naturally they are dying off or wearing out. There have been practically no replacements.

In this connection the action of the Executive Committee of the Indiana State Medical Association is timely and important. News of this action came as the July MONTHLY was going to press. We managed to make room for quoting a few paragraphs. We think it so important that we are now publishing the full report. If the word "Virginia" be substituted for "Indiana", the resolution would be equally true, except that the Council of the Medical Society of Virginia has had no meeting as yet.

"Now that V-E Day is passed and we are expecting the release from service of part of our Armed Forces, immediate consideration should be given to the release of as many of the doctors as is consistent with the best interest of the Armed Forces and of the civilian population. Promptness in reducing the size of the Medical Corps should be the positive aim of everyone having responsibility in this field. There should never be a time when any doctor is being kept in the military service with nothing for him to do professionally in connection with his military status. He should not be kept in the service to do things which could as well be done by those not trained as physicians. Many persons have delayed obtaining the medical care they should have had until their regular physicians get back from the war.

"The doctors in the service have written a glorious chapter in the history of Ameri-

can medicine. We point with particular pride to the record of the Indiana physicians who volunteered. Indiana was among the first states to fill its quota of medical officers. It never has lagged in filling any additional demands made upon the profession by the military authorities. The outstanding service rendered by these medical officers has merited rewards in every combat area where American troops have served and are serving. The Army, Navy, and Air Force should not incur the criticism of the public or of the physicians in those services by holding any physician in military service a day longer than the interest of the country requires.

"The medical profession of Indiana was determined at the outbreak of the war that no one in the Armed Services of the United States should ever lack medical care, no matter how urgent and severe an emergency the Armed Forces might be called upon to face. Some of the public may have felt that this obligation of medicine to the Armed Forces was over-emphasized, to the disadvantage of the civilian population. A severe epidemic would have presented a real medical problem, and it is fortunate that this has not occurred, for many doctors who did not enter the service have carried professional burdens beyond their strength.

"The Executive Committee of the Indiana State Medical Association urges that those in authority look upon the early and prompt release of physicians, when they can be spared, as a matter of the utmost urgency and importance—and when we say 'when they can be spared', we must be understood to mean that every soldier, sailor, marine, nurse, WAC, WAVE, or SPAR, or anyone else who needs medical care in connection with military services will have it, even without the physicians who are to be dismissed. But after all the Armed Services are taken care of, any delay in releasing a physician should be avoided as an injustice to the public, an unnecessary burden on the treasury, a source of criticism of those in authority, and unfair treatment of the physician who is serving his country."

### A New Hospital for Richmond

AS the result of a letter that Dr. W. W. Rixey wrote to the *Times Dispatch* last winter about the need of additional modern hospital facilities, and the discussion it provoked, the Richmond Community Council undertook a survey of Richmond's hospitals. For this survey the Council was fortunate in securing the services of Dr. Robin C. Buerki, Dean of the Graduate School of Medicine of the University of Pennsylvania. Dr. Buerki is an outstanding authority on hospitals. His report, which was made public on July 11, is interesting reading for Virginia doctors. He finds that Richmond needs at least 500 additional beds and recommends that a new community hospital be erected on a site that will allow for future expansion and for ample parking space. He suggested that the Richmond Community Hospital, an all negro hospital built in 1934, be closed provided that 75 to 100 beds in the proposed new hospital be set aside for negroes and be open to properly qualified negro physicians. He further suggested that the hospital at the City Home, the Retreat for the Sick, and the Sheltering Arms Hospital be urged to join in the plan. From a practical point of view the report is a very sensible one. It would provide for the immediate and future hospital needs of Richmond, with a hospital of a size that favors efficient and economic operation. The Richmond Community Hospital has never been able to have an intern, and for some time the securing of interns for the other hospitals mentioned, has been a perennial problem.

On the other hand, the Retreat for the Sick and the Sheltering Arms Hospital have served the sick of Richmond and Virginia for years and have rightfully earned a place in the affections of the people. The Retreat for the Sick was founded in 1877 as an emergency to provide teaching facilities for the Medical College of Virginia. On account of faculty squabbles in the last quarter of the nineteenth century, it was turned out of its first home and later was deserted by its chief sponsor. In spite of all this it continued to grow, which is the best evidence that it filled a need. The Sheltering Arms Hospital was founded by Miss Rebekah Peterkin in 1889 as a nonsectarian institution for needy white people of Virginia. It is said to be the only absolutely free hospital this side of New Orleans. Miss Peterkin's spirit still permeates the institution like a benediction. The patients feel it and are benefited thereby and the doctors who work there deem it a great privilege, as indeed it is.

It would be a pity for these splendid old institutions to lose their identity. Sentiment has some place in our lives, and when the rich people of Richmond die they need a worthy institution to name in their wills. The Sheltering Arms Hospital seemingly meets this need. Some way should be worked out for these old institutions to take part in this new project without losing their identity. It was done in New York by the Medical Center of Columbia University and the Cornell Medical Center and no doubt it could be done in Richmond. In that case the practical needs of Richmond could be met without a sacrifice of sentiment.

#### Beverley Randolph Tucker, 1874-1945

IN the death of Dr. Tucker, June 19, 1945, the Medical Society of Virginia lost a distinguished and valuable member. He was a regular attendant of the annual meetings and added to the value of the programs with both papers and discussions. Besides, he was a frequent contributor to the MONTHLY. His first contribution was a paper on *Tubes* in November 1907 and his last was a guest editorial on *The Shortage of Trained Nurses*, February 1945. He served on the memorable Historical Committee and was for a number of years a member of the Publication and Program Committee.

Dr. Tucker came of a family whose members have added much to the cultural life of Virginia since his great great grandfather, Judge St. George Tucker, came to this country from Bermuda before the Revolutionary War. His father, John Randolph Tucker, died of typhoid fever at the age of thirty-two, when Beverley was six years old. About this time he began what he called his changeable school career; this started in the public schools of Washington and ended at the Virginia Military Institute twelve years later. Part of this time he went to the Central Public School in Jefferson Davis' old mansion opposite the MONTHLY's office. He was a poor scholar and frequently failed in his classes.

After leaving V.M.I., he tried various ways of making a living, and it was rather late in life that he turned to medicine. He graduated M.D. at the Medical College of Virginia in 1905 when he was thirty-one years of age, but he did not really find himself until he came under the influence of Dr. Weir Mitchell, under whom he served as an interne in Philadelphia. Later he became his assistant in the clinic. That this influence was a profound one is shown by the fact that he named his first-born son after Dr. Mitchell, and in 1914 he wrote a beautiful little "Appreciation" of Dr. S.



Weir Mitchell, which he published. From that time on Dr. Tucker was no longer interested in making a living, but in Medicine. This interest was further intensified when he came under the influence of Sir James Purves-Stewart in Middlesex Hospital in London.

After post-graduate studies in Europe, which at that time was considered necessary as a "topping off" of a medical education, Dr. Tucker in 1907, settled in Richmond. He was made adjunct professor at the Medical College of Virginia and established the out-patient clinic in nervous diseases. He was soon looked upon as the pioneer neuropsychiatrist of the South. In 1912 a professorship in neurology and psychiatry was created for him at the Medical College of Virginia. Several attractive offers came to him to move to New York and to Philadelphia but, except for delivering a course of lectures in San Francisco at the Cooper Medical School, and attending several international congresses, he stuck steadfastly to the course that he had mapped out for himself in Richmond. In 1915 he established the Tucker Sanatorium. His work in his field, especially in pituitary gland disturbances and in encephalitis, was outstanding and received wide recognition.

He was, besides, a good citizen and was interested in the welfare of Richmond and the State of Virginia. He was a member of the State Board of Health and the chairman of its executive committee. He helped to found the Children's Memorial Clinic and served on its board for years. He was the first physician to the Juvenile Court of Richmond, and was also a member of the board of the Virginia Industrial Home for Girls. He was chairman of the first Governor's Mental Advisory Board of the Virginia State Penitentiary, and was consulting physician to the State Colony for Feeble-minded and Epileptic. He was a charter member of the Country Club of Virginia, a member of the Commonwealth Club, the Richmond German Club, the Virginia Poetry Society, and the Writer's Club of Virginia. He was vice-chairman of the Poe Shrine of Richmond, and vice-chairman and later chairman of the City Library Board. He was president of the Westmoreland Club in 1924 and of the Society of the Cincinnati of the State of Virginia in 1933 and 1934. He was president of the Seaboard Air Line Medical Association in 1937 and of the Atlantic Coast Line Surgeons' Association in 1939. He was president of the Tri-State Medical Association of Virginia and the Carolinas in 1931, of the Mental Hygiene Society of Virginia in 1937, and of the Richmond Academy of Medicine in 1942-43. His other medical societies were American College of Physicians, American Neurological Association, Southern Medical Association (Chairman of the Neurological Section in 1925) American Medical Association, Virginia Academy of Science, Nervous and Mental Research Association, and Pan-American Medical Association. He was a diplomate of the American Board of Neuropsychiatry, and a member of the board of the American Hospital of Paris and of the Alfred I. du Pont Institute for Handicapped Children in Wilmington, Delaware.

His publications also show his varied talents. For six years he was editor of the *Old Dominion Journal of Medicine and Surgery*. In 1914 he published a brief biography of Dr. S. Weir Mitchell. *Nervous Children* appeared in 1916. In 1919 he wrote the section on cranial nerves and their diseases for "Tice's System of Medicine". *Verses of Virginia* appeared in 1923; *The Lost Lenore*, a one-act play, in 1928; *The Gift of Genius* in 1930; *Adolescence* in 1932; *Narna Darrell*, an historical novel, in 1936; *Various Verses* in 1938; and *Tales of the Tuckers* in 1942. In 1926

Dr. Tucker delivered the fifth Bedford Lecture in Pittsburgh, the title being "The Physician's Contribution to Literature". He wrote and read the Phi Beta Kappa poem, "Anastasis", for William and Mary College in 1933. Besides some 68 medical articles, he wrote sketches of George Ben Johnston, William H. Taylor, James N. Ellis (Ellis' work at the Vienna Clinic) Charles Eduard Brown-Sequard, and Sir James Purves-Stewart.

That Dr. Tucker accomplished so much in so many fields is remarkable. One who wrote a poem to be read at his own grave and a treatise on genius surely could not complain if his friends tried to find wherein his genius lay. In the first place he came of a remarkable family, and in the second place he had a native wit. These lay dormant in Dr. Tucker until several great teachers fired his imagination. It was then merely a matter of time. Someone has said, in discussing the relative merits of heredity and environment, that not even the greatest artist could paint a masterpiece on a mud bank and a duffer could ruin the finest canvas and oils. In Dr. Tucker's case the raw material was of the finest and was subjected to the best influences; the result was a masterpiece—a rare combination of practical realism and poetic idealism. One of his maxims was: "If you have an enemy, ignore him." He reasoned that every knock might be a boost. He lived strictly by this maxim. He may have had enemies, but you never heard anything about them from "Bev". Of friends he had an abundance, and he took great delight in boosting them in every way.

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FOR BEVERLEY R. TUCKER, M.D.

*In memoriam cum amore*

Now, turned from deathly Hollywood,  
We know you are not there,  
Though tall the brooding monuments,  
Though soft the conquered air.  
We know you are not there.

The mind assays a nobler thought,  
Transcends its burdened fear;  
A wiser kindness wings the heart,  
A song—besought—is clear.  
For you are near.

But if less winsome smiles the earth,  
Inconstant fades a star,  
It is that loyal grace and light  
With you are vanished far,  
Dwell only where you are.

—Anne Page Johns.

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### Floral Eponym (29)

PAEONIA. PEONY. PINEY. PAEONY  
APOLLO OR PAEAN.

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These beautiful and showy spring flowers are named for the mythical physician Paeon. At least this is what Bailey says. Garrison on the other hand says that the physician was named for the flower. The chief god of healing in the Greek Pantheon was Apollo, commonly called Alexikakos (the averter of ills). "He was also the god of purity and well being in youth, and, as Homer relates, the physician to the Olympian gods, whose wounds or diseases he cured by means of the root of the peony, hence his name 'Paeon', and the epithet 'sons of Paeon' as applied to physicians." (Garrison.)

## News

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### The New Dispensary at the U. S. Naval Mine Depot,

Yorktown, was dedicated on July 15. It is a very modern 100-bed hospital, with all the diagnostic facilities of the average civilian hospital. The building is of a one story design, built in the shape of the cross of Lorraine. One complete wing is air conditioned and is completely equipped as an operating pavilion, with two operating rooms. In addition to the facilities for sick call, out-patient clinic, x-ray, physiotherapy, laboratory, diet kitchen, pharmacy, and dental offices, there are two large 36-bed wards for enlisted personnel. Adjoining each ward there are two quiet rooms and an office for the ward physician. One wing with eight rooms and connecting baths, with an adjoining solarium, is used for sick officers. The total cost of the dispensary was \$350,000.00. Captain Toson O. Summers, (MC), USN, MCV-'17, was responsible not only for the design of the hospital, but, also for its acceptance and approval by the Bureau of Medicine and Surgery.

The dedicatory service was attended by a large number of physicians located in the Tidewater area—civilian as well as those in service.

In addition to the address of welcome by Captain Summers, short addresses were presented by the Commanding Officer, Capt. R. D. Kirkpatrick, USN (Ret.) and by Capt. Ivan Bickelhaupt, Civil Engineering Corps, USNR. The dedicatory address was to be delivered by Rear Admiral Luther Sheldon, (MC), USN, but unfortunately he was unable to participate in the ceremonies because of illness. Capt. John Huff, (MC), USN, Assistant District Medical Officer, read Admiral Sheldon's dedicatory address. The dedicatory prayer was offered by Capt. W. H. Rafferty, Chaplain Corps, USN.

After the addresses, the Commanding Officer ordered the hoisting of the Geneva Red Cross and thus placed the dispensary in commission.

Captain Summers has completed his tour of duty at Yorktown and has recently been ordered to the Norfolk Navy Yard, Portsmouth, Va. He is being relieved by Captain George B. Tyler, (MC), USN, MCV-'14.

### News of Doctors in Service.

Lieutenant Colonel Staige D. Blackford, MC, of Charlottesville, Va., is now Chief of the Medical Service at Valley Forge General Hospital, Phoenixville, Pa. He succeeds Lieutenant Colonel Maurice A. Schitker, MC, of Toledo, O., who has left for an overseas assignment. Colonel Blackford recently returned to this country after 30 months' service as Chief of the Medical Service of the 8th Evacuation Hospital in North Africa and Italy. He was awarded the Legion of Merit for his work with that hospital. A graduate of the Department of Medicine, University of Virginia, he was Associate Professor of Internal Medicine at the University when he entered the Army.

Captain A. M. Jacobson, who was practicing in Roanoke at the time of entering the Service, and was overseas with the 305th General Hospital, was graduated on June 30 from the Army's School of Military Neuropsychiatry, held at Mason General Hospital, Brentwood, N. Y.

The following promotions have recently been noted for Virginia doctors:

#### To *Commander*:

Dr. Marshall P. Gordon, Richmond.

#### To *Major*:

Dr. Reid White iv, Lexington.

Dr. Allen W. Pepple, Richmond.

Dr. Joseph Ney, Harrisonburg.

### James River Medical Society.

Dr. O. L. Huffman of Arvonion, automatically became president of this Society upon the death of Dr. T. L. Driscoll. The secretary is Dr. Garland Dyches of Dillwyn.

### Amelia County Medical Society.

The following are officers of this society for the ensuing year: President and secretary, Dr. James L. Hamner, Mannboro; and vice-president, Dr. G. A. Arhart, Amelia.

### Married.

Dr. Randolph Harrison Hoge, Richmond, and Miss Florence Irene Elks, Weldon, N. C., June 23.

Dr. Harvey Ray St. Clair and Miss Pauline Carroll Keller, both of Staunton, June 23. Dr. St.



Clair graduated from the Medical College of Virginia this year, and is now interning at the U. S. Marine Hospital, New Orleans.

Dr. Oscar Orton Smith, Medical College Hospital, Richmond, and Miss Ann Christian Hunt, also of Richmond, July 7.

Dr. Robert Saul Salisbury, Richmond, class of December '43, Medical College of Virginia, and Miss Muriel Arline Cole, of New York City, June 15.

Dr. Lewis George Richards, Jr., Roanoke, of the June class, University of Virginia Department of Medicine, and Miss Dorothy Nelle Quinn of Lynchburg, June 23. Dr. Richards is now interning at St. Luke's Hospital, New York City.

Dr. Lucius Davis Hill, III, San Antonio, Texas, who has been serving an internship at the University Hospital, Charlottesville, and Miss Torrance Reed Rinehart, of that city, June 23.

Dr. Walter Cleveland Fitzgerald, class of December '43, University of Virginia, and Miss Martha Ann BonDurant of Princeton, W. Va., July 1. Dr. Fitzgerald is now in the Army Medical Corps and stationed at Carlisle Barracks, Pa.

#### **Councilor-Elect from Virginia to S.M.A.**

Dr. T. Dewey Davis, Richmond, has been appointed a member of the Council of the Southern Medical Association for Virginia for a regular Council term of five years, beginning at the close of the annual meeting in November, the appointment having been announced recently by the President-Elect, Dr. M. Y. Dabney, Birmingham, Alabama. Dr. Davis succeeds Dr. Thomas W. Murrell, Richmond, whose term will expire at the close of the annual meeting in November and who, having served the constitutional limit, is not eligible for reappointment.

Other Councilors-Elect named by Dr. Dabney to take office at close of the annual meeting of the Southern Medical in November are:

For Florida—Dr. William C. Thomas, Gainesville;

For South Carolina—Dr. W. L. Pressly, Due West;

For Texas—Dr. Walter G. Stuck, San Antonio.

#### **Medical College of Virginia News.**

Faculty promotions, July 1, 1945, in the School of Medicine are as follows:

#### *Department of Medicine:*

Dr. George H. L. Dillard from assistant in to instructor in medicine.

Dr. G. Watson James, III, from assistant in to instructor in medicine.

#### *Department of Neuropsychiatry:*

Dr. George Fishburn from assistant in to instructor in neuropsychiatry.

#### *Department of Neurological Surgery:*

Dr. A. C. Johnson from assistant in to instructor in neurological surgery.

#### *Department of Obstetrics:*

Dr. John R. Saunders from assistant in to instructor in obstetrics.

#### *Department of Ophthalmology:*

Dr. DuPont Guerry, III, from instructor in to associate in ophthalmology.

Dr. Edgar Childrey from associate in to assistant professor of ophthalmology.

#### *Department of Otology, Rhinology, and Laryngology:*

Dr. Thomas E. Hughes from associate in to associate professor of otology, rhinology, and laryngology.

Dr. E. L. Mrkvioka from assistant in to instructor in ophthalmology, otology, rhinology, and laryngology.

#### *Department of Pathology:*

Miss M. Katharine Cary from assistant to instructor in pathology.

#### *Department of Pediatrics:*

Dr. Thomas S. Chalkley from instructor in to associate in pediatrics.

Dr. Edwin L. Kendig from instructor in to associate in pediatrics.

Dr. Sarah Hoover Jones from assistant in to instructor in pediatrics.

#### *Department of Preventive Medicine:*

Dr. J. B. Porterfield from instructor in preventive and industrial medicine to assistant professor of preventive and industrial medicine.

#### **Schering Corporation Appoints New Sales and Promotion Heads.**

Schering Corporation, manufacturers of endocrine and pharmaceutical preparations, having offices in Bloomfield and plants in Bloomfield and Union, New Jersey, has appointed Dr. John N. McDonnell to the newly created post of Director of Domestic

Sales and Promotion of that company, succeeding Mr. Arthur F. Peterson, Manager of Domestic Sales Division, who has resigned. Mr. Herman W. Leitzow, eastern division manager since 1944, has been made assistant to Dr. McDonnell. Mr. George C. Straayer, manager of the professional service division, will continue in that post and in addition will devote part of his time to the development of field operations for Schering.

#### **New Health Officer in Southwest Virginia.**

Dr. Charles Preston Pope of Aiken, South Carolina, has been appointed Health Officer of the Pulaski-Wythe Health District, effective August 1.

#### **Information Bulletin for Medical Officers.**

The Bureau of Information of the American Medical Association has prepared a bulletin available to all physicians returning from the armed services, which gives a concise statement of facilities now available to help them with their problems of licensure, further education, or location. Copy may be had free upon application to the Bureau of Information, A.M.A., 535 North Dearborn Street, Chicago 10, Illinois.

#### **Jefferson Medical College.**

The 121st Annual Commencement was held on June 22, the Commencement address being delivered by H. W. Prentis, Jr., President of the Armstrong Cork Company, on "The R's of Professional Education".

The present graduating class of 152 members brings the total number of graduates up to 17,507. The members of the graduating class were registered from twenty-two different states and two insular possessions.

Ninety-five members of the graduating class received First Lieutenant M.C., A.U.S. Temporary Commissions, and four received First Lieutenant, Med. Res. Corps Commissions. The commissions were received after completing the requirements of the Army Specialized Training Program.

Forty-one members of the graduating class received Lieutenant (jg) M.C., U.S.N.R. commissions, and nineteen of this group went on active duty as U.S. Naval interns.

The Annual Alumni Dinner was not held, in compliance with the Office of Defense Transportation regulations.

#### **Anniversary of the Army Medical Department.**

The Army Medical Department celebrated its 170th anniversary on July 27 with the realization that it has grown into the largest organization of the kind ever known and that it is giving this nation's army the best medical care that soldiers have ever received.

From its inception in 1775 shortly after General George Washington became Commander-in-Chief of the Continental Army until the present day, the Army Medical Department has made steady progress in military medicine; it has made scientific discoveries that have benefited all of mankind; but never has its progress in both of these categories been so rapid as in recent years.

The Honorable Robert P. Patterson, Under Secretary of War, recently cited the Army's record of saving nearly 97 of every 100 wounded soldiers who reach Army Hospitals, the disease rate of less than one in one thousand, and similarly startling figures with reference to malaria, the dysenteries, and other diseases, showing that the Medical Department has established effective control on all disease fronts.

#### **Dr. Brock D. Jones,**

Norfolk, has accepted a residency in gynecology and obstetrics at Philadelphia Lying-In Hospital, beginning July 1, and will be there approximately eighteen months.

#### **Dr. Charles H. Henderson,**

Of Norton, was granted the certificate of the American Board of Ophthalmology at the meeting of the Board in New York in June 1945.

#### **Dr. George S. Row,**

Recently connected with the staff of Pine Camp Hospital, Richmond, moved to Bridgewater the first of July, and is engaged in general practice there.

#### **The Leslie Dana Gold Medal,**

Awarded annually for outstanding achievements in the prevention of blindness and the conservation of vision, will be presented this year to Dr. William Zentmayer of Philadelphia, according to announcement by the National Society for the Prevention of Blindness.

Dr. Zentmayer was selected for this honor by the St. Louis Society for the Blind, through which the

medal is offered by Mr. Leslie Dana of that city. Despite his 80 years, Dr. Zentmayer is in active practice as an ophthalmologist. He is Professor Emeritus of Diseases of the Eye, Graduate School of Medicine, University of Pennsylvania, and consulting surgeon to Wills (Eye) Hospital, St. Mary's Hospital and Glen Mills School, all in Philadelphia. He received his M.D. degree from the University of Pennsylvania School of Medicine in 1886.

**Dr. Randolph P. Pillow,**

After a year's internship at The Mason Clinic, Seattle, Washington, is now at the University of Virginia Hospital, Charlottesville.

**Physician Wanted:**

Physician for industrial dispensary in South. Must be graduate Class A school. Please write details and give references in first letter. Expenses of interview will be arranged for satisfactory applicants. Write to Medical Director, Box 590, Knoxville 5, Tennessee. (*Adv.*)

**For Sale:**

Urological X-Ray Table. Young-McKin-Smith with Liebel-Flarsheim Bucky Diaphragm. Can be seen at 1-D East Grace Street, Richmond, Va. (*Adv.*)

**Wanted:**

One qualified to act as Superintendent of Hospital and Nurses Training School at the Petersburg Hospital. Please send application, including qualifications, to Mr. J. Gordon Bohannon, Petersburg, Virginia. (*Adv.*)

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## Obituaries

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**Dr. Osbourne O. Ashworth,**

Widely known physician of Richmond, died unexpectedly on the evening of July 5 in Gloucester County, where he had gone for a short vacation. He was stricken with a heart attack and died a few minutes later. Dr. Ashworth was born on August

2, 1895, at Asheboro, N. C., but came to Richmond at an early age. Upon completion of his course at the University of Richmond, he studied medicine at the Medical College of Virginia, graduating from that institution in 1921. He interned at St. Elizabeth's Hospital, Richmond, and entered private practice in July 1923. At the time of his death he was on the staff of Stuart Circle Hospital. He was a member of numerous medical organizations, having joined the Medical Society of Virginia in 1924. His wife and two sons and a large family connection survive him.

**Dr. Robert Edward Whitehead,**

Prominent physician of Princess Anne County, died in a Norfolk hospital on July 2, aged seventy-two years. He graduated from the Medical College of Virginia in 1897, and had practiced general medicine in Princess Anne County for forty-eight years. He was a Mason, chairman of the County School Board for a number of years, president of his local medical society for several terms, and was for sometime active in the work of the Medical Society of Virginia, in which he held membership since 1897. Dr. Whitehead was also a member of several other organizations. He is survived by his wife and seven children.

**Dr. Thomas Garrett Pretlow,**

Well known physician and for thirty years coroner of Chesterfield County, died July 8, at his home in Chester. He was a native of Southampton County and sixty-six years of age. Dr. Pretlow studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1903. He then practiced for several years in Richmond before locating at Chester. He was a Mason, active in church work, and chairman of the Chesterfield Board of Health for many years. He had been a member of the Medical Society of Virginia since 1904. Dr. Pretlow is survived by his second wife and four children, one of them Dr. William R. Pretlow of Warrenton.

**Dr. William Read Martin,**

Of Charlotte, C. H., died June 24, after a short illness. He was born in Charlotte County sixty-two years ago, and studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1907. He joined the Medi-



cal Society of Virginia the following year. Following graduation, Dr. Martin practiced for a time in Bedford and Rockbridge Counties, before returning to Charlotte where he had practiced for over thirty years. He had been health officer for his county for the past four years, was a former president of the South Piedmont Medical Society, and had been an officer in his county medical organization most of the time since its organization. His wife and a daughter survive him.

#### Dr. George Craig Eggleston,

The following resolutions were adopted by the Amelia County Medical Society on the death of Dr. Eggleston, June 29, 1945:

WHEREAS it has pleased Almighty God to remove from our midst Dr. George Craig Eggleston, senior member of our society and for many years an outstanding and greatly beloved physician of our county, BE IT RESOLVED:

*First:* That in his death we have lost a valuable and beloved citizen, a wise counselor, a kindly man and a dear friend as well as an able and distinguished physician;

*Second:* With his magnetic personality, his rare gift of humorous expression and his wisdom, acquired through long and wide experience, he was a dominant figure among the members of his profession who regret his passing and will miss his willing and able consultations, and his genial spirit;

*Third:* That a copy of these resolutions be sent to Dr. Eggleston's family, to the VIRGINIA MEDICAL MONTHLY, to the local paper, and a copy recorded with the minutes of this meeting.

JAMES L. HAMNER, *Secretary*,  
Amelia County Medical Society.

#### Dr. John Cameron McCluer, Jr.,

Prominent physician of Alexandria, died June 26, at thirty-nine years of age. He was a native of Parkersburg, W. Va., and a graduate of the University of Virginia Department of Medicine in 1932. Dr. McCluer was engaged in general practice in Alexandria since 1934. He is survived by his mother and a sister.

"The Alexandria Medical Society deeply regrets the loss of their fellow member, Dr. J. Cameron McCluer.

"We wish to extend to his bereaved family our deepest sympathy and to express to them our sincere appreciation of Dr. McCluer as a fellow practitioner and friend.

"We, the members of the Alexandria Medical Society, resolve that this resolution be sent to his family,

the *Alexandria Gazette*, and the VIRGINIA MEDICAL MONTHLY."

Signed:

L. FLOYD HOBBS, *President*  
JAMES A. GOOCH  
C. E. ARNETTE

#### Dr. Leroy Lee Sawyer,

A prominent physician of Great Bridge, died June 13 at the age of eighty-two. He graduated from the University of Maryland School of Medicine, Baltimore, in 1890, and was actively engaged in the practice of medicine at the time of his death. He was a member of the Board of Directors of the Merchants and Planters Bank, of the Norfolk County Medical Society and a charter member of the Seaboard Medical Society. He is survived by his wife, a son, Dr. Leroy Lee Sawyer, Jr., of Washington, D. C., a daughter, and three grandchildren.

#### Dr. Samuel Addison Reynolds

Died at his home at Vashti in Pittsylvania County, July 8, aged eighty-one years. He graduated from the Medical College of Virginia in 1887 and practiced for over half a century in Pittsylvania and Franklin Counties, retiring to work on his farm only a few years ago. He had been a member of the Medical Society of Virginia since 1901, was a Mason, and had been active in politics. A sister survives him.

#### Dr. Ulpian Henry Johnson,

Who for forty years practiced his profession in New Kent and King William Counties, died at a Richmond hospital on July 11. He was sixty-eight years of age and had graduated in medicine from the Medical College of Virginia in 1905. His wife and two sons survive him.

#### Dr. Walter Edward Bundy,

Oak Hill, W. Va., died June 4 of heart disease, at the age of sixty-one. He was a native of Southwest Virginia and graduated from the former University College of Medicine, Richmond, in 1908. Dr. Bundy was a member of his State and the American Medical Associations and, at the time of his death, was president of the Fayette County (W. Va.) Medical Society. His wife and several children survive him.



## "The Calm of Eventide"

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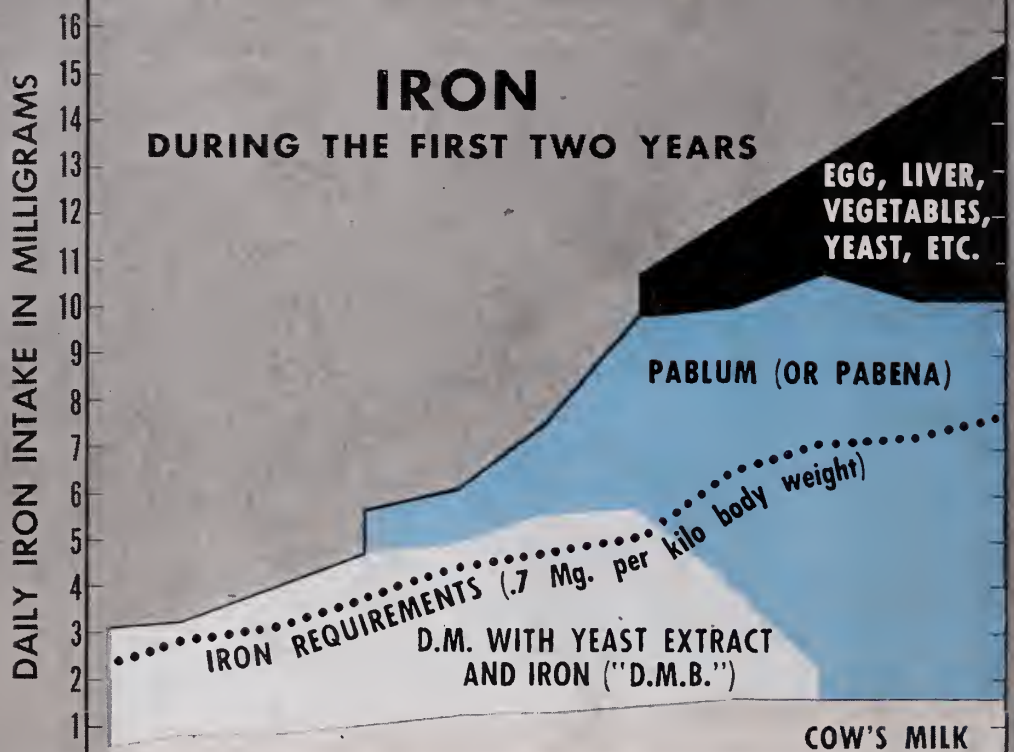
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AGE, Mos.	1/4	1	2	3	4	5	6	9	12	18	24
WEIGHT, Lbs.	7	9	10	12	14	15	17	19	21	24	27
MILK, Oz.	10	16	18	21	24	26	28	32	32	32	32
"D.M.B.," Oz.	1	1	1 1/4	1 1/2	1 1/2	1 3/4	1 3/4	1	1/4	0	0
PABLUM, Oz.	0	0	0	1/8	1/4	1/4	1/2	3/4	1	1	1

## IRON DURING THE FIRST TWO YEARS

During fetal life iron accumulates (in the form of hemoglobin) in the infant's body. After birth the hemoglobin frequently drops to 50% by the third month, especially in prematures. Neither breast milk nor cow's milk supplies sufficient iron for the needs of the infant. This chart shows that when the carbohydrate is "D.M.B." and the cereal is either Pablum or Pabena, a generous margin of safety over the requirements can be maintained, not only during the important first six months, but throughout the first two years of life.

More iron than the calculated requirement is needed because some iron is not utilized. In rapidly growing or poorly nourished infants, and in the presence of infection, the need for iron may be even greater than is indicated in this chart for normal infants.

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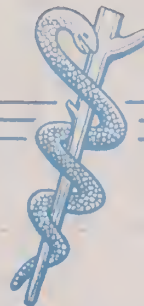
# *Virginia* MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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*September 1945*



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## *Guest Editorial*

### Dr. Sun Yat-sen and the Republic of China

OCTOBER 10, 1945, will mark the thirty-fourth anniversary of the Republic of China. The founding of the republic in 1911 was largely due to the leadership of Sun Yat-sen, the famed revolutionist and "father of his country". The liberation of China from the corrupt Manchu conquerors changed the destiny of a fifth of the earth's people, a people who have just engaged in nine years of war to bring to full realization the dream of Sun Yat-sen.

Hundreds of communities in the United States will hold "China Friendship Day" ceremonies on October 10 in celebration of China's Independence Day.

Sun Yat-sen, whose name appropriately means "Sun's Immortal One", led a dangerous and exciting life in laying the secret plans which finally freed the people of China from the yoke of the Manchus. For eighteen years he was banished from his own country and in constant danger of assassination by Manchu agents.

Because he could look at China's political and economic problems with western eyes, Dr. Sun was the first to see the necessity of a political revolution. The revolution that he began had three basic aims; national independence, progressive realization of democracy, and a rising level of living conditions for the masses. These are still the aims of the Chinese people today.

Dr. Sun mapped the construction of a new China in three stages. The first, military operations to weld the country into a nation and break the ground for the second period, that of instruction of the people in the principles of the revolution and the republic. Then, after this preparation, would come constitutional government.

Sun Yat-sen was born in 1866 in a village of Kwangtung, just two years after the bitterly fought Taiping Rebellion had ended. The rebellion had been directed mainly against the Manchu rulers and what they represented. During his young boyhood, Sun Yat-sen heard a great deal of discussion about this rebellion. Undoubtedly it was during this period that he absorbed the first seed of revolution which was to bear such rich fruit in later years.

At the age of thirteen, Sun Yat-sen arrived in Honolulu to pay an extended visit to his older brother who had emigrated to Hawaii many years before. For three years

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EDITOR'S NOTE—China has won our admiration for the gallant way in which for nine long years she fought a cruel foe whose highly mechanized army was comparable in every way to the one that over ran practically all of Europe in a matter of a few months. She is of especial interest to doctors for the way she has taken to Western Medicine in the last few decades, and because her first president was a doctor.



he attended school conducted by the Bishop of the Anglican Church, and when he left to return to China he carried with him the second prize in English Grammar, an English Bible and a habit of reading it, and an insight into Western ways and ideas. He spent only one year in his native village before moving on to Hongkong "by request", having disgraced his father and incurred the wrath of village councillors by the deliberate breaking of an idol's finger in the local temple—an act to symbolize his irritation at the backwardness of China.

Sun Yat-sen attended a series of schools in Hongkong, became a Christian, and in 1892 was the first graduate of the new British Medical College which had opened in 1885. Armed with a medical degree and with a growing conviction that China's ills could be cured only through revolution, Dr. Sun decided he must win the sympathy of the English and Americans. In 1896 he went to London, but soon after his arrival was kidnapped by Manchu agents and concealed in the Legation. A former teacher, Sir James Cantile, received news of the kidnapping through a porter in the Legation



The International Peace Hospital in Northwest China is built into caves along a mountainside of that barren land. It was founded with Canadian and American Relief Funds and is now supported by the China Aid Council of United China Relief. (Picture courtesy of United China Relief).

building. Sir James immediately appealed to British officials. Newspapers printed the story, thus forcing Dr. Sun's release. Immediately he found himself an international celebrity.

Dr. Sun continued his work. He traveled the world over, making what was virtually a house-to-house canvass of Chinese overseas. Wherever he found his countrymen he won converts and contributions to the cause of China's freedom. Contact was established between groups overseas and groups within China. There were repeated attempts at risings—in vain. Then came October 10, 1911, and success. Ironically, the news of this success came to Dr. Sun while reading a newspaper in Denver! That newspaper story was his first word of the rising that was to fan out from the valley

of the Yangtze, overthrow the Manchu throne, and result in the founding of the Republic. A month later, in London, Dr. Sun received an invitation to head the new government. When he returned triumphantly to his native land a young officer named Chiang Kai-shek, who had fought in the revolution, became his aide. Today Chiang Kai-shek is generalissimo of China's armies, and President of the Republic.

Sun Yat-sen became first provisional president of the Republic in January of 1912 at Nanking. The next month the formal abdication of the Manchus was issued. Not long after that Dr. Sun, in the hope of furthering national unity, resigned the Presidency in favor of Yuan Shih-kai, who had commanded the imperial forces that had opposed the revolutionists. Dr. Sun, the least vain of men, thought Yuan's executive ability and prestige were needed by the fledgling state. Yuan subsequently conceived the idea of setting himself up as emperor. And, after his death, chaos was spread over China by rival war lords.



China Blood Bank, developed in America by the American Bureau for Medical Aid to China, is shown in actual operation in China. Blood from several donors is accepted simultaneously while other Chinese soldiers await their turn. (Picture courtesy of United China Relief).

Undaunted, Dr. Sun carried on with his program for China. He established his revolutionary government in Canton, and was chosen as its President. In 1925, while in Peking seeking to achieve unity among rival political factions, he died of cancer at the age of 59.

Dr. Sun left to his countrymen an exhortation to carry on toward the goal he had set for China. It is his Will, of which the following is a translation:

"For forty years I have devoted myself to the cause of the people's revolution with but one end in view, the elevation of China to a position of freedom and equality

among the nations. My experiences during those forty years have firmly convinced me that to attain this goal we must bring about a thorough awakening of our own people and ally ourselves in a common struggle with those peoples of the world who treat us on the basis of equality.

"The work of the Revolution is not yet done. Let all our comrades follow my 'Plans for National Reconstruction,' 'Fundamentals of National Reconstruction,' 'Three Principles of the People,' and the 'Manifesto' issued by the First National Convention of our Party, and strive on earnestly for their consummation. Above all, our recent declarations in favor of the convocation of a National Convention and the abolition of unequal treaties should be carried into effect with the least possible delay. This is my heartfelt charge to you."

First civil wars and then the Japanese invasion and occupation have delayed the great program of making China a truly free and modern nation. In November the best minds of modern China are scheduled to meet and write a constitution for China that would bring to all the people the liberties and opportunities for progress which Dr. Sun envisioned.

RUSSELL WHELAN.

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EDITOR'S NOTE—Mr. Whelan is the author of "The Flying Tigers" and a frequent contributor to magazines. He is press and radio publicity director for United China Relief.

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### Floral Eponym (30)

#### EUPATORIUM

#### MITHRADATES VI. *Eupator*.

Eupatorium is a genus of some 600 species. To it belong such common Fall-blooming herbs as Joe-Pye Weed, Hemp, Agromony, Mist Flower, and Thoroughwort or Boneset. The name, Eupatorium, commemorates an ancient king of Pontus, said by Pliny to have employed one of his group of plants in medicine.

Mithradates VI. *Eupator*, called the Great, succeeded in driving the Romans out of Asia Minor, but was finally conquered by Pompey. Ancient authorities have invested Mithradates with a halo of romance, making of him a sort of princely John Bunyan. His courage, his bodily strength and size, his skill in the use of weapons, in riding and in the chase, his speed on foot, his capacity for eating and drinking, his penetrating intellect and his mastery of 22 languages are celebrated to a degree which is almost incredible. He spent much of his time in practicing magic.



## RECENT ADVANCES IN DRUG THERAPY\*

AUSTIN SMITH, M.D.,

Secretary, Council on Pharmacy and Chemistry, A.M.A.,  
Chicago, Illinois.

Today drug therapy occupies a foremost place in the thoughts of not only members of the medical profession but members of allied professions and even other professions which are not directly related to medicine. Everyone concerned with health, whether it be on the civilian front or fighting fronts in foreign lands, is conscious of the need for the preservation of health and the rapid cure of disease. The war has precipitated much of this interest; it has also precipitated interest in new fields of medical science. The interest has been so great that we are encouraged to think that from now on the use of drugs will never be relegated to a comparatively minor position; rather it will be recognized as an intricate part of medical treatment and worthy of continuous study by researcher and medical practitioner.

The use of drugs has been regarded by many as a means of satisfying the patient's request to relieve his pain or to cure some fever or infection; too often it has been regarded as a means of doing something to impress the patient when the diagnosis was not certain. Some have also administered drugs in the honest belief that their diagnosis was accurate and the medicine of value, whereas both were lacking. Fortunately for such physicians and their patients, the body usually gets well in spite of what is done to it. The members of this audience will recognize that drugs commonly were abused years ago, abused because medical knowledge had not progressed to the horizons which have been opened up in the last ten years. Today, however, the use of any well known and potent drug can and should be reserved for specific conditions, to be used only when indicated. Furthermore, it should be used in a manner which is most effective for the patient's own good. If this was not true, there would be no need for special tests such as the determination of drug levels in the blood when powerful drugs such as the sulfonamides and thiocyanates are used.

There are few truly effective drugs that can be called safe for all patients and it is necessary to realize not only the beneficial effects of drugs but

the harmful possibilities that may occur. Today the physician who intelligently uses drugs must know pharmacology and toxicology. If he cannot master the details of all the drugs that are thrown before him, he should reserve his choice for a few compounds, learning to use them well. It is not necessary for him to be familiar with all the digitalis preparations and barbituric acid preparations. One, two, or three of each group will tide him over most of his cases, regardless of his specialty. He should also know where to go for information when he is urged to use some preparation with which he is not familiar but which is described in a more enthusiastic fashion than seems warranted on the basis of available facts.

Most important of all, he should realize that the use of drugs, like all other medical acts, is only part of the general practice of prevention and treatment of disease. There isn't any one technic or procedure which will permit a trained medical man to cure all disease or prevent all disease. If there were, there would be no need for medical schools and the extensive curricula which they now maintain. Out of this war there seems to be emerging a general realization of this fact and it seems safe to predict that when the war is over all mankind will benefit. For example, until recently emphasis was placed solely on the use of drugs in the treatment of malaria. Now we realize that rehabilitation can play a very important part and in some instances produce more dramatic responses than any chemical compound that has yet been used. Of course, rehabilitation has its limitations and this is the important thing to remember in all diseases—all forms of treatment have well-defined limitations.

This evening I do not wish to devote my statements entirely to new advances in drugs and offer them one after the other. Later, I shall emphasize a few of these, but, in view of the excellent work which is reported time after time from this vicinity, I feel it is unnecessary to spend too much time on penicillin, the sulfonamides, thiouracil and other drugs which are foremost in everyone's mind. Instead I would like to use these advances as a nucleus

\*Read at the regular meeting of the Richmond Academy of Medicine, January 23, 1945.

to draw attention to several problems concerning which learned men such as the members of this audience can provide much assistance. To provide a background, I would like to draw attention briefly to the improvements that have occurred in medical sciences in the past few years. From this background we should be able to see what constitute advances in drug therapy, the scope of drug therapy and its trend, and things that need to be done.

Many will remember that during the Crimean War the French lost 8 men from disease for every 1 killed in battle, while the Russians lost 20 to 1. The common causes for this disaster were cholera, typhus, dysentery, and infections. In the Spanish-American War 7 soldiers were lost for every 1 who died in battle. In the Civil War 50 per cent of the wounded died, whereas in World War I 6 to 12 per cent of the wounded died, while in World War II the figure has been only 3 per cent. The annual death rate overseas during World War I was 12.8 for each one thousand men abroad; in World War II, some time ago, the figure was 0.5 per thousand men. In World War I, 20 to 30 per cent of soldiers who contracted pneumonia died; in World War II only 1 per cent. In World War I, of soldiers who contracted meningococcic meningitis, 37 to 39 per cent died, while in this war only 3 to 5 per cent have been victims.

As a result of the general improvements in the prevention and treatment of disease countless lives have been saved. Some idea of this saving can be estimated by comparing the deaths caused by disease at the beginning and end of a given period. For example, in 1900 pneumonia, diphtheria, typhoid, meningitis and smallpox caused per 100,000 population, 150, 40, 31, 7 and 2 deaths, respectively; in 1940, the deaths were 25, 1, 1, 0.5 and 0.01, respectively per 100,000 population. This improvement has resulted in the saving of 250,000 lives from five diseases seen in a forty year period. Just picture the saving when all diseases have been taken into account!

Another indication of our improved health is the increased life expectancy. In 1900 the parents of a newborn child could expect their offspring to live for 49.2 years, but in 1940 the child had a life expectancy of 63.3 years, and in 1942, 64.2 years.

Of course, much of this improvement is due to

better hygiene, effective educational health plans, improved hospital facilities and many other things that comprise medical care. Into the picture, however, has crept one subject that is playing an increasingly important role, the subject of the use of drugs for the prevention, diagnosis and treatment of disease. Serums and vaccines, sulfonamides, penicillin, pain relievers, blood substitutes, anti-malarials, hormones and vitamins are just a few of the names which the physician hears from the time he is a student until he has retired from active practice. If he is conscientious and does not wish to practice with inadequate knowledge, he continues his studies throughout his entire career. Regardless of his specialty, he cannot divorce himself from the use of drugs.

But there remains much to be done: The best possible drugs have probably not been developed; there is still considerable illness. For example, during 1942, 2 to 3 per cent of the entire population was ill each day; 10 per cent became a hospital bed patient during the year; there was a hospital entry every  $2\frac{1}{2}$  seconds, an operation every  $5\frac{1}{2}$  seconds, a birth each 20 seconds. In 1943 there was a hospital entry every 2 seconds. The number of hospital entries in 1943 was 15,300,000, an increase of 3,000,000 over 1942; the number of births, 1,900,000, an increase of 250,000.

Industrial losses bear special significance during war. Some idea of the annual industrial loss is gained by examining figures for 1942: Every 20 minutes one worker was killed; every 5 minutes one worker was disabled. The loss represented \$4,000,000,000.00, or the closing of 1,750 factories each employing 1,000 men. Drugs alone would not prevent all this enormous wastage but they could be of much aid in the presence of infections, respiratory and cardiac failure and other conditions which are susceptible to modification by potent therapeutic agents.

All of this adds up to an annual break-up of 500,000 families because of the death of husband or wife and the creation of 200,000 widows and widowers with 500,000 dependents under eighteen. If for no other reason, this latter fact should provide sufficient emotional appeal to urge on everyone in a search for better medical aids and for employment of only sound medical principles. To meet the demands of modern medicine requires enormous

amounts of drugs. At the moment, large quantities are needed by the armed forces and for shipment to allied and occupied countries but some idea of production may be gained from a few well-known substances: In the month of January, 1944, there was produced 750,000 pounds of acetylsalicylic acid, 23,000 pounds niacinamide, 22,000 pounds phenobarbital, 650,000 pounds sulfonamides, and 12,500,000,000 units of penicillin. During 1942 there was produced 5,434,000 pounds of sulfonamide; in 1943, 9,860,000 pounds.

Penicillin affords a good example of the growth of production which occurs when a new drug is developed and found satisfactory for general release. Production may be tabulated as follows:

1943:		
January-May -----	400,000,000	units
June -----	425,000,000	"
July -----	762,000,000	"
August -----	904,000,000	"
December -----	9,000,000,000	"
1944:		
January -----	12,500,000,000	"
February -----	18,200,000,000	"
March -----	35,000,000,000	"
April -----	70,000,000,000	"
May -----	100,000,000,000	"
December -----	200,000,000,000	"

Mass production permits economic savings for drug purchasers. For example, the cost of penicillin has been reduced from \$20.00 per 100,000 units to about \$2.00, depending on the manufacturer. Thiamine has been reduced from \$300.00 per gram to 20 cents; riboflavin, from \$7.50 to 28 cents; vitamin C from \$2.00 to three cents. Thus, as in other industries, when production goes up, cost usually comes down, the reduction being reflected in the selling price of an article.

To achieve worthwhile drugs and mass production involves expenditure of material and trained scientific effort that is impossible to estimate accurately in terms of actual dollars. Apart from the contributions of the scientific staff, we know that drug houses, foundations, medical schools and other research centers are spending each year many million dollars, possibly fifty million dollars. Even this figure is comparatively small, however, to what will be spent in the next few years. The government alone through its O.S.R.D. contracts has provided enormous sums for research. The end is not in sight.

With this background one can understand the tremendous strides that have been made in the practice of medicine. Even the most skeptical lay individual should be convinced that this represents better medicine than some of his old time superstitions—such as curing chicken pox by waiting until the chickens have gone to roost, then putting the sufferer in the door of the chicken house and chasing out the chickens over him; or when one felt a chill coming on, acting as if he were going to jump into bed but instead dive under the bed so the chill would pass by; or curing a cold by standing in front of a mirror and sneezing in the hope that the cold would enter the reflection in the mirror; or curing sores by placing on them the hand of a dead person.

At the same time, this background affords an opportunity to review lightly but appreciatively some of the newer drugs and treatment measures. Unfortunately, many advances that have been made must be held in secrecy as they have been done under contract with the O.S.R.D. This includes not only the development of new drugs, but technics of administration and general medical care. Nevertheless, one can review the status of sulfonamides, vitamins, penicillin, thiouracil and other preparations, confident in the knowledge that progress with these agents is being reflected even at the moment in general medical practice.

In the last few months there have been no new sulfonamides developed and offered in interstate commerce, so at the moment the medical profession has at its command sulfanilamide, sulfapyridine, sulfathiazole, sulfadiazine, sulfamerazine, sulfapyrazine, sulfaguanidine, and succinylsulfathiazole, and the sodium salts of all except sulfanilamide, sulfasuxidine and sulfaguanidine. Sulfamerazine and sulfapyrazine are more recent additions to the sulfonamide group, sulfamerazine being used in the treatment of pneumococcal, streptococcal, meningococcal and gonococcal infections. Approximately one-half the amount of sulfamerazine as is required of sulfadiazine will produce comparable blood concentrations. Sulfamerazine is more rapidly and completely absorbed from the gastro-intestinal tract than is sulfadiazine, but it is excreted more slowly. Thus, it is given in smaller amounts and less frequently. It penetrates cerebrospinal pleural and peritoneal fluids. The concentration of free drug in cerebrospinal fluid is approximately 50 per cent of that in



serum. Sulfapyrazine appears to have a low order of toxicity in experimental animals. It is absorbed and excreted rather slowly, and high blood levels are not obtained with single large oral doses. The drug is secreted in the cerebrospinal fluid and reaches concentrations of about one-half to two-thirds of blood level within 12 hours following intravenous administration of sulfapyrazine sodium. It is secreted also in other body fluids. It is probably as effective as sulfadiazine in the treatment of pneumococcal, hemolytic streptococcal and *B. coli* infections. Further, it appears to be effective against *Shigella paradysenteriae*, and in the presence of meningococcic meningitis.

Another interesting development of sulfonamide therapy is the recent work which has been done to show that these drugs may be used quite satisfactorily for prophylactic purposes. For example, they may be used prophylactically for dysentery and for upper respiratory infections. The latter problem has been studied rather extensively in the armed forces, but its application in civilian practice remains to be more fully evaluated.

Penicillin has been widely discussed and undoubtedly the members of this audience are quite familiar with details of the action of this drug and its uses. I should like to pause only long enough to mention the possibilities of penicillin in the treatment of syphilis and gonorrhea, possibly bacterial endocarditis, and to point out that there is a substance known as penicillin-X which is effective in single, comparatively small doses against gonorrheal infections. Another interesting item is the recent convention held in London on the standardization of penicillin, at which representatives of England, France, Canada and the United States attended. It would be of decided advantage to develop standards which have international application, as penicillin, like the sulfonamides, will remain an important part of the medical armamentarium unless a better substitute is found.

One of the most interesting topics of recent months is the use of thiouracil in the treatment of thyrotoxicosis. Thiouracil and thiourea have been found to exert a depressing influence primarily on the functional activity of the thyroid and hence on the basal metabolic rate. The mode of action of these drugs appears to be an interference with the enzymatic synthesis of thyroid hormone. The exact

site of block is still not known, but it seems to be established that the thyroid is rendered incapable of utilizing iodine for these processes. Whether or not thiouracil will prove to be a satisfactory substitute for surgical treatment of toxic goiter remains for further investigation. However, the drug promises to be of much value in cases in which operation is inadvisable or contraindicated. Thiouracil is not without toxic possibilities and the danger of agranulocytosis should always be borne in mind. Other toxic manifestations include skin eruptions, fever, arthralgia and jaundice.

There have been no new vitamins offered in the past few months with specific claims for clinical use. On the other hand, there has been sufficient work done to show that several vitamins may be synthesized in the intestinal tract, a finding which is causing some individuals to wonder about the present claims for vitamin deficiencies and need for vitamin supplements. Obviously, vitamin nutrition is a field which is still much in need of considerable investigation and clarification.

The control of air-borne infection has been studied for many years and yet it is only recently that there has come promise of effective agents. There are now employed such practices as spraying walls and floors with fine oil, installation of ultraviolet lamps, and dispersion of glycol vapors. The use of oil spray on floors has been found to affect materially the spread of dust and bacteria-bearing particles. The use of ultraviolet irradiation in experimental set-ups has been shown to have some value, but the value is limited, as has been definitely shown by the Council on Physical Medicine of the American Medical Association. The use of glycol vapors, on the other hand, offers much hope and, if effective machinery can be made so that the vapors may be dispersed evenly and completely throughout rooms, there is a possibility that some of our air-borne infections may be controlled for the first time before the responsible bacteria strike the victim.

The use of serum and plasma as blood substitutes has been life-saving to wounded soldiers. This subject has been discussed extensively and is probably familiar to all members of this audience, but I would like to emphasize a new product derived from blood, a product known as albumin and which when dried is found to be about as effective as serum, and yet occupies only about 1/25 of the space needed for

serum and plasma. This is of tremendous importance in shipping when large quantities must be transferred over long distances. Like serum and plasma, albumin does not need to be typed before administered as it represents pooled lots. In the field of blood and blood substitutes and derivatives are two compounds which promise to be of considerable value in the control of bleeding: One is thrombin which is applied locally; another is a substance developed by E. J. Cohn and known as fibrin foam. This substance when dry has a sponge-like appearance. Prior to use it is dissolved in saline solution. It is quite effective in controlling hemorrhage and promises to be of considerable aid, especially in brain surgery.

One cannot leave the question of blood without making reference to substances which are now available to prolong bleeding time. Heparin has been known for sometime, and yet only recently has come into fairly extensive use. On the other hand, a group of compounds known as dicoumarin compounds are comparatively new developments and yet are being fairly extensively used even now.

In the field of serums and vaccines perhaps the three things which have excited as much interest as any other biologic in the last year or so are yellow fever vaccines, influenza vaccines and immune serum globulin. Yellow fever vaccines have demonstrated their effectiveness and are widely employed by the armed forces. "Flu" vaccines have not yet been made generally available, but there has been sufficient work done to indicate that they have considerably more value than any influenza vaccine that has yet been developed. Even though there is a supply available it doesn't seem practical to use this substance in a wholesale manner such as is done with smallpox vaccine, diphtheria toxoids, etc., and probably the vaccine that is now available will continue to be reserved for special circumstances. During the year a scheme was set up whereby immune serum globulin, the substance which is left over when blood is processed for shipment to the armed forces, could be made available throughout the country for the prevention of measles. The research leading to the development of this product was carried out by the Plasma Fractionation Laboratory of the Harvard Medical School under Professor E. J. Cohn. Pharmaceutical manufacturers have agreed, since the blood is donated by the people, to make

the product available through health departments at actual cost, the plan being a cooperative one with the American Red Cross.

One could go on to considerable length discussing other topics, such as the development of synthetic endocrine substances, the work that is being done on anti-hypertensive agents, the development of new pain relievers such as Demerol, the treatment of "athlete's foot" and the value of germicidal soaps. However, time limits such discussion. Further, the purpose of this presentation as announced in the beginning was to provide a background for certain questions which are being posed daily by patients in almost every practitioner's office. The medical man today must be prepared to practice not only good medicine but to answer questions frequently on topics which are almost outside his field of interest. Failure to answer these questions may risk loss of confidence on the part of the patient, while, on the other hand, supplying a satisfactory answer will increase confidence and good will. From my own experience with lay groups and groups consisting of medical men and members of allied professions, I have learned that the following questions are most frequently asked by the general population. At the same time these questions, with a little study, are among the easiest to answer, and this evening I hope that I have provided some information to assist in the answering of the following queries:

Does the medical profession possess effective drugs? What are some?

Does it know how to use them?

Does it have opportunity to keep up to date with medical advances?

Does it make use of the opportunities?

How effective are modern drugs?

Are there enough of them for everyone who needs them?

Is there need for better substitutes?

What is being done to obtain better drugs?

What constitutes medical research?

Who participates?

When new discoveries are made, are they kept hidden? If not, are they carefully worked out before being passed on?

Is there any protection against use by those who are not qualified to apply the new discoveries?

Does the public benefit from new discoveries? How?

Who pays for this work?

Members of the medical profession must be prepared to answer these questions; conduct research; apply intelligently the discoveries of research; know where to obtain authentic information when in doubt; and recognize personal limitations with a view to either correcting them or abiding by them. It is no disgrace to admit ignorance of new developments as no one can hope to keep up with all aspects of medical progress. It is to one's credit to

admit he doesn't know, especially when he follows the admission with "But I'll soon find out what it's all about." After all, when human lives are at stake, there are involved responsibilities which are more important than one's ego. Fortunately, the medical profession is composed of men whose education and contacts with the human side of life promote full realization of the importance of truthfulness and adequate knowledge; if it did not, then the medical profession would not occupy its present place in the scientific world and in community life.

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### Typhus Control in Yugoslavia.

As part of its duties under the International Sanitary Conventions of 1944, the United Nations Relief and Rehabilitation Administration has assumed leadership in the program for control of typhus in Yugoslavia.

Twenty UNRRA doctors, nurses, sanitary engineers and other technicians are now at work as members of the health staff of the UNRRA Yugoslav mission. The takeover of the control program by UNRRA was completed July 1.

The United States of America Typhus Commission formerly led the control program in Yugoslavia with UNRRA personnel assisting. The Commission signed an agreement with Marshall Tito last January setting up the necessary arrangements for the work. Mass inoculation of the entire population of Bosnia and Herzegovina is well under way and half a million people have been inoculated to halt the spread of endemic typhus in that area. DDT powder and vaccine were shipped to the area by plane so as to expedite the program. With the arrival of the U. S. A. Typhus Commission last winter, modern methods of epidemic control were introduced. DDT insecticide powder is applied with hand or electric blow guns. Hundreds of people can be disinfected in a short space of time. No undressing, bathing, and subsequent disinfection of wearing apparel is necessary.

Dr. W. A. Sawyer, Director of the Health Division, expressed a hope that UNRRA, in carrying forward the work so well begun by the United States of America Typhus Commission, in cooperation with the health officers of the Yugoslav Government, would be able to rid Yugoslav of louse-born typhus and so preclude the possibility of future outbreaks.

### Easier Access to Public Buildings Urged for Handicapped Persons.

A recently inaugurated campaign by the National Society for Crippled Children and Adults to construct new public buildings with ground level entries, elevators between floors and the elimination of all unnecessary steps should help to "decrease the number of accidents among the handicapped as well as greatly increase their ability to perform business activities and seek pleasure with greater frequency and ease," says the August 18 issue of *The Journal of the American Medical Association*.

"This society," *The Journal* says, "also urges the remodeling of existing buildings with long flights of stairs, to provide ground level entries, elevators, ramps and other practicable measures aimed at the elimination or amelioration of impediments to ready access. Patients with heart disease, crippling illnesses, missing limbs or other disorders of locomotion form an increasing proportion of the population, both because of the war and because of the lengthened average age."



## THE NON-SURGICAL THERAPY OF EPILEPSY\*

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In this presentation we use the word "epilepsy" to include all chronically recurrent convulsions, whatever the etiology, with the exception of those cases which are amenable to surgery, those which are based on systemic lesions such as pancreatic or cardiac disease, and those which are manifestations of hysteria. In the literal sense of the word, cures in any case of epilepsy, other than by surgical procedures, are questionable. Therefore, we are compelled to direct our therapeutic efforts towards relieving as many of the symptoms as is possible. In order to institute such measures, we must recognize all the symptoms of epilepsy. We have divided these symptoms into several general groups, the first, but not necessarily the most important group, being comprised of the convulsion and its immediate complications. With many patients it is remarkable how little stress is placed on the seizures. In fact, it seems that the family suffers from the convulsions, while the patient suffers from his personality reaction and society's attitude towards this disease. Whereas he may average only one seizure a year, and that occur in his sleep, this often creates more or less constant anxiety and may result in mental and emotional disturbances of severe degree. Equally as serious, and by far more difficult to treat, are the symptoms of the disease as suffered by society itself. A great number of epileptics who are well able to support themselves are handled unnecessarily through charity. Untreated or poorly treated epileptics also are responsible for some of our dangerous automobile drivers as well as behavior problem children, criminals and other anti-social persons. Society also suffers from the steady addition of more epileptics through improper control of certain families. It is obvious that this is too great a burden for the individual physician and requires assistance from special investigative and therapeutic clinics, various medical societies, lay rehabilitation groups and society in general.

Before treatment is begun, all diagnostic studies should be completed. Otherwise, a certain percentage will not return for completion of studies once the convulsions cease. If there is sufficient intelligence, we insist that the patient keep a diary recording the number of seizures, the exact time at which they occur, a subjective and objective description of the pre-convulsive, convulsive and post-convulsive periods, a description of any variation of medicine, and a description of anything unusual which happened prior to the seizure. From the very beginning, we attempt to encourage the patient and his family and to make them realize that they have someone who is interested and available at any time for any problem, whether or not related to epilepsy. We also emphasize that patience must be maintained, since it may require a year or even more before the best drug or combination of drugs are found. We frankly tell the patient our diagnosis except in rare instances, and particularly avoid the use of words like "spasms", "fainting spells", and the like. Cooperation has been much better when the facts were presented early. When any medication is prescribed, we emphasize the danger of the patient missing a single dose. Knowledge of possible status epilepticus is a potent reminder. In the beginning, it must be remembered that a patient may be having a great number of minor seizures, and that these may make him forget to take his medicine at the proper time. Therefore, a member of the family should check this until it is certain that the patient is clear enough to be trusted with the medication. On the first visit, the family should be told how to treat the single seizure, how to observe such, and when to call the doctor. At varying intervals, the progress of the patient should be checked by an electroencephalogram.

Phenobarbital and sodium dilantin are the drugs most commonly used in the treatment of the convulsions. Other drugs used less frequently but quite successfully at times are mebaral, sodium bromide,

\*Read at the annual meeting of the Medical Society of Virginia in Richmond, October 23-25, 1944.

glutamic acid, ergotamine tartrate, caffeine, and benzedrine sulfate. Other measures used at times are the ketogenic diet, low protein diet, low salt intake, and dehydration.

Fortunately the cost of medicine is not a serious problem in treatment of epilepsy. The average monthly cost does not exceed \$3.00, except when using glutamic acid which may cost as much as \$20.00 a month.

The action of these drugs is not clearly understood. Several have a depressant effect which helps reduce the number of seizures by rendering the patient less sensitive to external stimuli. Phenobarbital apparently has a selective effect on the motor cortex, slowing up the electrical activity in this area.

After the medication to be used has been selected, the question of what dose to give arises. In general, all should be started at a low level, and gradually built up as high as is indicated. If the seizures are frequent, it may be necessary to maintain a subtoxic level. As a rule, therapy is more effective if the dose is spread over the day in divided doses. If the patient has his seizures at any special time, for example while asleep, the dose may be given on retiring. In patients giving such a history, it must be remembered that they may be having numerous minor seizures during the day time. The presence or absence of these should be determined by electroencephalography, and the treatment varied accordingly.

In children, when phenobarbital or sodium dilantin is prescribed, it is preferable to start with gr.  $\frac{1}{2}$ , and over a period of several weeks increase until 3-4 doses are taken daily. The same is true in the adult except that the dose is generally started at gr.  $1\frac{1}{2}$ . In prescribing mebaral, which is a less toxic barbitol derivative, the dose is regulated so that gr. 3 are equivalent to gr.  $1\frac{1}{2}$  of sodium dilantin or phenobarbital. The usual dose of bromide is gr. 5-15 three times daily. On occasion a stimulant is preferred, and, of these, caffeine (gr. 1-3 daily) or benzedrine sulfate (5-25 mgm. daily) are the drugs of choice. Stimulants should not be given later than 2:00 P. M. The administration of glutamic acid is started at gr.  $7\frac{1}{2}$  three times daily, being increased daily until the pH of the urine is maintained as near 5.0 as is possible. It is preferable to start this drug in the hospital, or under the close supervision of a physician. At first the pH

of the urine must be determined daily with nitrazine paper, and the patient or an appropriate member of his family must be taught how to read the test. After the pH is relatively stable, the testing may be done twice a week.

Each patient has his own manner of responding to the individual drugs. In general, phenobarbital or sodium dilantin or combinations of these two usually control the grand mal attacks if any drug will. Sodium dilantin has an additional advantage in often increasing the patient's sense of well-being. If the only type of seizure complained of is the petit mal variety, phenobarbital and sodium dilantin may have no effect or even an adverse effect on the symptoms. In the past, bromides have seemed to control petit mal attacks better than any other drug. Recently, however, glutamic acid has been introduced and appears to be particularly effective against these seizures in children. We have not tried this on a sufficient number of patients to reach definite conclusions. Certainly several of the patients have not been helped by it, and at least one complained more on the treatment than previously. However, in at least half the instances, the patient and families have been quite enthusiastic.

For example, in June, 1944, a 15 year old girl was admitted to the hospital, having had grand mal seizures once or twice a month since the age of ten. Her development up to the age of eight had been slow, but then she became noticeably worse. She was very sluggish, inattentive, and disinterested, particularly in her appearance. She had never combed her hair. She was very difficult to get up in the morning. She was doing very poorly in school, being in the 7th grade at the time she was seen. In 1942 her mental age was 7 years and 10 months, and her I. Q., 62. Since 1942 she had been taking sodium dilantin gr.  $1\frac{1}{2}$  four times daily. In June, 1944, her mental age was 7 years 4 months, and her I. Q. was 51. An electroencephalogram done on June 25, 1944, revealed the presence of very irregular cortical electrical activity, featuring waves with great variation in frequency and voltage. In addition, there were bursts of cerebral dysrhythmia characteristic of petit mal variants which occurred once every 18 seconds on an average, occupying a total of 24 per cent of the record. Her dilantin being kept at the same dose, she was placed on glutamic acid. On October 17, 1944, she was taking gr. 60 of glutamic acid

after each meal. On this occasion, the electroencephalogram in general was of much lower voltage and, in many areas, was within normal limits. No true bursts of the petit mal variant type were present. The parents felt that there had been a remarkable improvement in her illness, since she was much more pleasant and easier to handle. She was passing all her work in high school, and learning things with greater ease. She was much more alert, even becoming critical of her family because they are not as energetic early in the morning as she is. She had taken much more interest in her appearance. Her mental age on this occasion was 8 years, her I. Q. being 55. She had had two major seizures.

If the attacks feature visceral or vasomotor symptoms, it may be worthwhile to add ergotamine tartrate in small doses (1 mgm. three times daily). Children presenting behavior problems and showing cerebral dysrhythmia on the electroencephalogram may respond favorably to benzedrine sulfate.

Any of these drugs may be toxic, the symptoms usually appearing within the first few weeks. With phenobarbital, the most common ill effect is sluggishness. The patient may also become irritable, ataxic, or psychotic. Skin rashes may complicate therapy with phenobarbital, dilantin, or bromides. Sodium dilantin features among its toxic effects gastro-intestinal upsets, diplopia, hyperplasia of the gums, tremors, vertigo and psychoses. The use of bromides is becoming less frequent because of its unpredictability. If caffeine and benzedrine sulfate are given later than 2:00 P. M., the patient may not be able to sleep at night. Sodium dilantin as well as phenobarbital may at times increase petit mal attacks. The major disadvantage of glutamic acid is the fact that large doses may be necessary, sometimes amounting to 15 large tablets three times a day.

The ketogenic diet primarily is used in an effort to control petit mal attacks in children, but its effectiveness is reduced by the fact that it is so unpleasant and so difficult to maintain. Glutamic acid was introduced in an effort to replace this means of therapy. There is some clinical and experimental evidence which shows that an excessive intake of fluids increases the incidence of convulsions. On this basis, it has been suggested that low salt intake and dehydration be carried out. As a rule, we urge our patients to drink as little water as possible, and

to avoid an excess of salt on their food, but we do not carry this to an extreme.

In general, all physical disorders of the patient should be corrected. It has been suggested that these patients should take exercises which increase the ability of the lung to expand. They should avoid excesses of all natures, and absolutely refrain from alcoholic beverages.

Because of the wide variety of psychogenic disturbances present in these patients, we cannot go into any detail regarding psychotherapy. We feel strongly that our patients are helped by joining the American Epilepsy League. This is an organization the purposes of which are to educate the individual epileptic and society in general, to actively assist in rehabilitation and employment of epileptics, and to aid research in the disease. On joining the organization, the patient is sent a book which is written on all phases of epilepsy in words understandable by a non-professional person.

Usually when we have established our diagnosis and discussed the same with the patient, we make a special effort to attempt to correct any false ideas which are present. This discussion usually comprises statements regarding the frequency of epilepsy, the ability to maintain regular employment, the relatively little chance of being institutionalized because of development of mental disease, the unwarranted attitude of shame, and the general prognosis. We try to discuss the general subject of epilepsy with them as much as time permits. We urge the patient to lead as normal a life as is possible, with maximal education and employment for his ability. As personality defects arise, they must be handled individually.

The therapy of epilepsy, to be of maximal benefit to the patient, must include education of the patient's local society group, as well as society in general. Every effort should be made to train the untrained epileptic for employment, and assist all who are capable in obtaining employment. After employment the patients should be supervised at regular intervals in order to maintain the best possible employer-employee relationship. This can best be handled through a social service group, who also can assist the patient in solving the problems which arise in his local society.

Finally, since this is a disease not only of a single person but also of all society, therapeutic measures



must be applied directly to society. Among the most important of these are institutionalization of the hopeless cases, sterilization of hereditary cases, prevention of car driving by epileptics, and laws definitely protecting employers of epileptics.

As has been stated, the proper treatment of epilepsy includes all possible efforts of individual physicians, medical and lay organizations, and society in general. Certainly the individual physician will do all in his power to help these persons; medical organizations are assisting in advancement of knowledge on the subject; a few scattered rehabilitation societies are helping as much as they can. Until society in general can see fit to contribute for research more than twenty cents per year per epileptic, it can hardly be considered to be doing its share.

#### DISCUSSION

DR. JOHN M. MEREDITH, Richmond: I am very glad to have heard Dr. Newbill's paper on the non-surgical treatment of epilepsy because, after all, the majority of such patients, particularly the younger group, are not of the surgical type. All neuro-surgeons tend to stress the idea that so many patients with convulsions have surgical lesions. It is, however, very true, particularly in children, that the great majority with convulsions do not have surgical lesions at all. With Dr. Newbill's very thorough review in mind, I am sure the importance of non-surgical treatment is apparent. We do feel that adults, 35 years of age and older, who develop convulsions for the first time, are probably harboring a mass lesion of the brain and should be investigated by means of an air injection. Also, all children with convulsions sooner or later should have an encephalogram. I am sure this is done by Dr. Newbill and Dr. Leigh.

The electro-encephalogram is coming to the fore and has been received with great interest by the neuro-psychiatrists. We feel that all children, as well as adults with convulsions, should have an electro-encephalogram as well as an air injection. It may show a definite focus, and it is of aid in therapy. It is of great value to know if a child has abnormal waves in the electro-encephalogram and particularly, if the waves are slow, it is thought that glutamic acid is more beneficial in patients with petit mal.

There are certain general measures that seem rather minor, but when taken together do help these individuals a great deal in carrying out their normal daily life. A few years ago the advisability of dehydration in epilepsy was discussed a great deal, and Dr. Temple Fay of Philadelphia recommended that the daily fluid intake should be reduced to 300 to 500 c.c. Most students of epilepsy today feel that that is a little drastic and confine the dehydration to a lesser degree of from 800 to 1,000 c.c. for 24 hours. In winter, this is not so very difficult, but in hot weather it is rather a hardship on the patient

to carry out even that restriction. In women and adolescent girls who have seizures usually at their menstrual periods it is a good idea to reduce the fluid intake for a few days before menstruation. We usually advocate moderate constant dehydration in those individuals also.

In regard to drugs, dilantin is usually valuable and often is effective when luminal fails to control the seizures. The whole problem in epilepsy is to rule out a surgical lesion by an air injection and then to use these various measures outlined by the essayists today.

It has been held in various clinics that it is always best to view the seizure itself and not take the word of anyone else for it, because it may be hysterical or non-existent. It is of real importance then to see the seizure for one's self and determine whether or not it is hysterical before drug therapy, electro-encephalography or encephalography is recommended.

DR. DAVID C. WILSON, University: I certainly enjoyed Dr. Newbill's paper. His thorough and concise presentation is to be commended.

Dr. Newbill is now in charge of all our patients with seizures; and he is making quite an effort to develop a clinic of service, shall we say, for these individuals. This service is growing so fast that I do not know just what is going to happen. It looks as if it is going to push everything else out of the hospital. I do think, though, that it is absolutely essential to organize centers for the care of persons with seizures. I think undoubtedly we should have some organized place in Richmond where they can go, and I think there should be several others in the State. Certainly this organized clinic in Charlottesville cannot hope to take care of the tremendous numbers of people that have these conditions.

The reason for the great increase in numbers is mainly the attention given to the patient and the use of the electro-encephalogram. We see many people who have fainting attacks, who have so-called hysterical spells, who have sudden weakness of the knees—things that are passed by usually or given some other diagnosis. Usually they have petit mal seizures, and when this is brought out by the electro-encephalogram they can be helped.

I should like to ask Dr. Newbill to talk a little more about the handling of glutamic acid in the home—how it can be done or whether it can be done. I should also like to ask him to talk a little more about varying the glutamic acid and dilantin to suit the patient. That is one of the valuable results of studying people in seizures, because each one needs a different dose.

The employment factor is one we have discussed before. That is, getting these people adjusted so that they can lead normal lives, because undoubtedly the fact that they cannot lead normal lives is what leads to personality disorders. So I should like to ask Dr. Newbill to make a few suggestions for better adjustment for them along that line.

DR. BASIL B. JONES, Richmond: I enjoyed Dr. Newbill's paper very much, but was rather surprised that no mention was made of allergy. I want to mention briefly two cases which are possibly illustrative of a cause

of petit mal. One was a child about a year or a year and a half old when I first saw him. He had a history of repeated momentary spells of unconsciousness. In going over the history there was a fairly typical picture of milk allergy, involving the grandmother, the mother, an uncle who had convulsions from milk and the patient. I changed the child from cow's milk to mullsoy and after that it had only one more seizure. I saw this child recently—about a year after the elimination of milk, and was told that he had had no more convulsions.

The other child has a congenital hemiplegia and a definite history of brief convulsions. In addition to the convulsions he was suffering with severe constipation and colic. He had numerous changes in diet: ascorbic acid for orange juice, mullsoy, evaporated milk, goat's milk, lactic acid milk, and so forth. He had continued to be constipated and frequently had momentary convulsions. Finally the child was put on fresh milk, and for some reason difficult to explain, the bowel function was corrected. After the bowel function became normal, the convulsions stopped.

This child is also one of a series of cases of meningococcal septicemia which I shall report shortly in the *Virginia Medical Monthly*, and comment there will be made about the cessation of his petit mal which, apparently, was caused by the dietary change.

After experiences such as these it would seem that the possibility of gastro-intestinal allergy should be investigated carefully in any case of convulsive seizures, particularly petit mal, because the elimination of the offending food might cure the patient.

Dr. NEWBILL, closing the discussion: In regard to allergy, we omitted this problem purposely and felt that it should be included under the sub-heading of General Physical Defects. All such physiological and pathological alterations from the normal should be investigated, and corrected if possible.

Dr. Meredith mentioned the observation of a seizure in a hospital, and also mentioned that this may be hysterical. One must always remember that patients with epilepsy can also have and do have hysterical seizures. For this reason, the presence of an hysterical attack does not rule out epilepsy.

In regard to the frequency of epilepsy, this disease is of approximately the same incidence as diabetes mellitus, or active tuberculosis. It has been shown by well established and accepted statistics that one-half or more of one per cent of the general population have convulsions. In this State alone, that would mean that there are approximately 12,500 epileptics of whom we have seen in the vicinity of 1,000 to 1,500 at the University Hospital during the past five years.

In discussing the glutamic acid therapy in the home, I omitted giving the details during the talk because of the time involved. I should also mention that it is important to vary the dose of dilantin for the individual patient, a single dose being necessary in some cases, whereas sub-toxic levels must be maintained in others.

In regard to the questions about employment of the epileptics, there appear to be too many factors involved to discuss this at the moment, but the problem will be discussed in more detail in the paper as printed.

## New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia, and are available to our readers under usual library rules:

Army Air Forces—Physiology of flight.

Baker—The first woman doctor, the story of Elizabeth Blackwell.

Binger—The doctor's job. (The Norton Medical Award.)

Bridges—Food and beverage analyses.

Conant—Military manual of clinical mycology.

Corner—Ourselves unborn.

Farrington—Railroads at war.

Ford—Diseases of the nervous system in infancy, childhood and adolescence.

Gallagher—Lady in waiting.

Hamblen—Endocrinology of woman.

Hertzler—Ventures in science of a country surgeon.

Hill—A textbook of oral pathology.

Hilleboe & Morgan—Mass radiography of the chest.

Kolmer—Penicillin therapy.

Kraemer—Advances in colloid science.

Lichtwitz—Pathology and therapy of rheumatic fever.

Lindner—Rebel without a cause . . . the hypoanalysis of a criminal psychopath.

Maher—The reticulo-endothelial system in sulfonamide activity.

Molloy—Pride's way. (Novel).

National Research Council—Manual of Tropical Medicine.

Pickard & Buley—The midwest pioneer, his ills, cures and doctors.

Puffer—Familial susceptibility to tuberculosis.

Riggs—Intelligent living.

Schering Corporation—Sex endocrinology.

Simpson—Tempo and mode in evaluation.

Simpson—Fever therapy, abstracts and discussions of papers presented at the Int. Conf.

Stephenson—Exploring in physics.

Waksman—Microbial and antibiotic substances.

Wendt—Science for the world of tomorrow.

Wodehouse—Hayfever plants. (*Chronica Botanica*.)

## DICUMAROL THERAPY AND PROTHROMBIN TIME\*

C. P. SEGARD, M.D.,  
Leonias, New Jersey.

Three quite interesting discoveries have been presented to the medical profession by the Wisconsin Alumni Research Foundation in the past twenty years. The discovery of Vitamin D and ultra-violet irradiation by Dr. Steenbock has been accepted in the field of medicine and in the field of nutrition throughout the world. The discovery of the catalytic action of copper in building hemoglobin by Professor Hart has been an important addition in the treatment of secondary anemia. Another discovery by Professor Hart, namely, the stabilization of iodine, has been extremely useful in the prevention of goiter in animals. Its usefulness has been extended to table salt for humans. A fourth discovery, by Dr. K. P. Link of the University of Wisconsin, in which the action of Dicumarol delays blood coagulation and prolongs prothrombin time is the subject of this presentation.

For many years medical interest had been centered on coagulants, both topically and for internal use. Calcium therapy was used internally and in some cases was of distinct benefit. Viper venom and other agents were used topically. Thrombin is a new coagulant recently introduced. The opposite condition was of little interest then, though a useful anticoagulant had a much wider field of application.

**HEPARIN:** Previous to the discovery of Dicumarol, it was observed in 1916 that certain tissue extracts have a capacity of prolonging blood coagulation time. In 1933 a crystalline salt, now known as Heparin, was successfully prepared from liver extract. The action of Heparin is more or less immediate and of short duration. It is given intravenously by the intermittent dosage plan. Heparin can only be given parenterally and its cost is rather high. The discovery of Dicumarol marks a considerable addition to our knowledge and use of the anticoagulants.

**DICUMAROL:** Dr. Link of the University of Wisconsin discovered and synthesized Dicumarol after being called in consultation where spoiled sweet clover disease among cattle had become somewhat common. From eating spoiled sweet clover hay

cattle would show considerable hemorrhage under the skin. The urine would at times be almost entirely blood. From bumping against the side of the stall hematomas of considerable size would develop. Death from a generalized hemorrhage would result.

After isolation of Dicumarol as the offending substance, the product was tried on other animals and, later, on human beings, and was found to have an anti-coagulant effect similar to Heparin. It had, however, several advantages. It could be given orally, whereas Heparin must be given intravenously. Its cost is low, thus eliminating the financial barrier to its continuous use in those conditions that require anticoagulant therapy over a period of time. Dicumarol acts slowly and its effect recedes slowly. Evidence is now conclusive, from both experimental and clinical observations, that coagulation of the blood of both man and animals can be considerably impaired without interference with normal life.

**OCCURRENCE OF THROMBOSIS:** Some of the conditions where anticoagulants have been successfully used are: thrombophlebitis, coronary thrombosis, pulmonary embolism, and operations where there is a possibility of thrombo-embolization. Certain abdominal operations are more likely to be followed by thrombosis and pulmonary embolism than others. These include resection of the stomach, exploratory laparotomy for inoperable cancer, colostomy, enterostomy, operation for ruptured appendix, cholecystectomy and intestinal resection. Repair of umbilical femoral or inguinal hernia, hysterectomy, operations on the brain and spinal cord have frequently been followed by thrombotic phenomena. About 93 per cent of the postoperative fatalities due to pulmonary embolism are in patients over forty years of age. "The number of deaths that occur after operation for malignant lesions is out of all proportion to the number of such operations. In contrast, death from pulmonary embolism almost never occurs following thyroidectomy". (Barnes, S. R., Mayo Clinic.) Further, as Edgar Allen has suggested, "It is challenging to contemplate the effect which would be produced on morbidity and mortality rates among the aging by the *reduction* of the tendency of the blood toward thrombosis by one-third or more".

\*Presented before the Richmond Academy of Medicine, April 10, 1945.



The anticoagulants, of which Heparin and Dicumarol are the most important clinically, are used to prolong the coagulation time of the blood. One, Dicumarol, delays or prevents the formation of prothrombin, the other Heparin, inhibits the activity of the prothrombin in the blood stream and may inhibit the action of thromboplastin. The formation of thrombin is therefore lessened, or may be altogether prevented.

While clotting is a necessary function of blood, to postpone or delay its action in certain conditions is of considerable value. Frequently it is important to prolong the clotting time as early as possible, for the formation of a *single* clot presupposes the formation of others. In this emergency an anticoagulant that is immediately effective becomes a necessity. Heparin acts immediately (or within a few hours) and is therefore used for its prompt effect. Dicumarol may be used to secure prolonged effect or an effect taking place within 12-24 hours. Its effect is not manifested for at least ten hours regardless of the size of the dose. The effect is not noticeable for 24 hours if whole plasma is used for prothrombin determination, but is noticeable in 10 hours with diluted plasma (12.5 per cent).

**PROTHROMBIN DETERMINATION IMPORTANT:** Dicumarol should not be given unless a daily prothrombin time is made. At present, daily estimations are made, but it is believed that, as experience is being gained, it may be made every second day. Prothrombin time is taken with whole plasma, and with diluted plasma (25 per cent and 12.5 per cent). The coagulation time of whole blood is used to determine the effective dose of Heparin. With Dicumarol, prothrombin time as determined with whole or diluted plasma is the method of choice. The use of both whole and diluted plasma at each determination gives such additional information to the clinician as to warrant its adoption as routine procedure by the laboratory.

The recommended dosage of Dicumarol is 300 mgm. the first day, 200 mgm. the second day and the daily maintenance level determined subsequent days by the prothrombin time and the progress of the case. The dosage varies with the body weight and the prothrombin time. Salts for intravenous use are not stable.

**EXTENDED USE OF DICUMAROL:** Since the discovery of Dicumarol, it has been tried in a number of conditions. Its greatest use has been in those

conditions where thrombosis occurs due to a changing condition in the blood stream. Phlebothrombosis, thrombophlebitis, thrombosis in different organs and as a prophylactic in post-operative and post-partum cases. It is now being used in subacute bacterial endocarditis with penicillin, and in multiple sclerosis. Its successful use in burns and massive tissue destruction has been reported. The use of Dicumarol in the latter conditions appears sound because clots formed on the surface tend to delay healing since the formation of the clot puts the tissue covered by the clot outside of the healing system. The pressure bandage is used to prevent clot. In addition, the anticoagulant action of Dicumarol therapy has a distinct advantage. Dicumarol has also been used in frost bite and diabetes. The evidence was sufficiently satisfactory to warrant its continuance in this field. There is no doubt but that the field of usefulness of anticoagulant therapy will be extended as experience with the drug widens.

**SALICYLATES AND XANTHINES:** In the study of anticoagulants, it soon became evident that there were a number of drugs that influenced Dicumarol action. The first studied was the salicylates. It was noted that the salicylate addict and those who used a daily high salicylate intake had a prolonged prothrombin time. To impose a full dosage of Dicumarol on this group would unduly prolong the prothrombin time and cause hemorrhage. Another group of drugs studied was the 'xanthines. This group has the opposite effect—they shorten the prothrombin time and thus the caffeine addict may require higher dosage of Dicumarol. It is therefore suggested that, where possible, the intake of the salicylates and the xanthines be eliminated during the period of Dicumarol therapy. The salicylates would, of course, enhance the action of Dicumarol; the xanthines would retard its action. Dilute plasma prothrombin determinations indicate the effect of these groups of drugs, whereas whole plasma determination may not be adequately sensitive.

A third group requiring our attention is those cases of heart failure receiving digitalis. Whether the thrombosis is due to the slowing of the blood stream in these cardiac conditions, or due to some factor of the digitalis, is not known.

**EFFECTIVE CONTROL IMPORTANT:** There has been considerable discussion regarding Dicumarol and mention has been made in the literature that it is dangerous. It is a potent anticoagulant, but is not

hazardous in the hands of the careful physician. Fatalities recorded during the experimental period were not due to failure of the drug, but to failure of control. Control is quite simple. Maintenance of the prothrombin time at about twice the normal is safe and efficient. This generally requires a lower level dosage after the initial dosage.

**TWO COAGULANTS CAN NEUTRALIZE DICUMAROL EFFECT:** In those cases where the prothrombin time has become unduly extended, or where hemorrhage occurs, two remedies are effective. The first used was *fresh* whole blood transfusion. This restored promptly the prothrombin content of the blood and controlled the bleeding. Another and equally effective antidote is by the use of massive doses of Vitamin K. Given intravenously 60 or more mgms. of Vitamin K will control the hemorrhage in a few hours. It seems that this dose of K lessens the action of Dicumarol on the liver so that a safe level is maintained.

**PROTHROMBIN TIME:** Since the work of Quick of Marquette Medical School, there has been considerable study of thromboplastins and changes in method of prothrombin determination. Since thromboplastin is very susceptible to temperature change and other influences, it requires great care in preparation and use in determining prothrombin time. The Quick method using whole plasma and the Shapiro modification with diluted plasma, are now the generally accepted methods. When both whole and diluted plasma tests are made, three additional points of information become available. These are:

(1) Whole plasma prothrombin changes are evident in about 24 hours, whereas diluted plasma shows changes in about 8-10 hours.

(2) When the diluted plasma prothrombin time shows a day-to-day reduction without appreciable changes in the whole plasma prothrombin time,

thrombosis may be expected. The dosage of Dicumarol should be increased.

(3) When the whole plasma prothrombin time shows a day-to-day lengthening of the prothrombin time without a parallel increase in the dilute curve, hemorrhage may be expected. The Dicumarol should be withdrawn.

Satisfactory thromboplastin is now on the market for prothrombin determinations. A statement of the normal figure plus a dilution curve of activity should accompany every preparation of thromboplastin. In this way it is simple to determine the significance of the figures obtained in a test.

We consider a thromboplastin of good activity one which reveals a reading for normal whole plasma of 17 to 20 seconds and diluted plasma 37 to 42 seconds. For Dicumarol therapy we consider double the normal for whole plasma and three times the normal for dilute plasma is well within the safe therapeutic range.

Because of the many factors that lower the activity of a thromboplastin made without technical control, it would seem best to use a thromboplastin that has been properly standardized under the conditions mentioned. If a laboratory desires to prepare its own thromboplastin, it should follow either the Quick or the Shapiro technique and make certain that the activity is in the range mentioned above.

#### SUMMARY

Dicumarol is a safe anticoagulant. Its therapeutic range is that at which the prothrombin time of whole plasma is prolonged to double, of diluted (12.5 per cent) plasma to about thrice normal. Dicumarol acts slowly and recedes slowly. Its antidotes are fresh blood transfusion and high dosage of Vitamin K. Dicumarol activity can be determined only by its effect upon the prothrombin time.

## PENICILLIN IN THE TREATMENT OF PYOGENIC INFECTIONS OF THE SKIN—A REPORT OF FIFTY CASES

R. CAMPBELL MANSON, MAJOR, M.C.,  
Army of the United States.\*

Under the general group of the pyodermas are included the infections in which the principal etiological agents are staphylococci and streptococci. These infections may be primary in origin, as in impetigo, or secondary to other eruptions, such as secondarily infected trichophytosis pedis. Infections of this type form a high percentage of the admissions to the Army hospitals, due to the fact that irregular bathing habits, trauma, irritations from rough clothing, exposure to oils and greases, and insect bites are prevalent among soldiers.

Penicillin has proven to be effective in the treatment of infections produced by the gonococcus, pneumococcus, staphylococcus aureus, and streptococcus. In a report by the Committee on Chemo-Therapy of the National Research Council, impressive results were obtained in staphylococcal infections not accompanied by bacteremia. In forty-eight of fifty-five cases of osteomyelitis the lesions either healed completely, or the exudate became free from staphylococci and eventually healed. In a recent report by Major Lyons, sixty-nine of seventy-nine patients with staphylococcal infections without bacteremia showed a favorable response to penicillin therapy. In carbuncles and miscellaneous staphylococcal infections of the skin and subcutaneous tissues, penicillin has proven remarkably effective. In many instances the drug has been employed successfully by means of local application alone, but a consensus of opinion favors the employment of the parenteral route in all but the most superficial cases.

Penicillin therapy was started on our patients as a rule after other methods such as local wet dressings, ointments, and other routine procedures had failed. However, during the period in which penicillin was administered, the patient was usually continued on some type of wet dressings when necessary for his comfort. The average dosage received in each case was one million units given in twenty-five thousand unit doses every three hours intramuscularly for five days, or until there was obvious regression of the lesions.

### RESULTS OF TREATMENT

In a survey of fifty cases of pyogenic skin infec-

tions treated with penicillin in a General Hospital, the cases have been divided into six distinct groups, namely: Sycosis Vulgaris, Impetigo Contagiosa, Impetiginous Dermatitis, Secondarily Infected Trichophytosis Pedis, Generalized Furunculosis, and Miscellaneous Cases.

#### *Group I. Sycosis Vulgaris*

In this group of two cases both were due to staphylococcus aureus hemolyticus. One case of fifteen months' duration was cured in thirteen days and discharged to duty. The other case of twenty-one months' duration was unimproved after ninety days' hospitalization.

#### *Group II. Impetigo Contagiosa*

Under this group there were eleven cases, all of which showed a positive culture for staphylococcus aureus hemolyticus, three of which were combined with streptococcus hemolyticus. The average duration of the disease was twenty-two days and the average period of hospitalization was thirteen days. There were ten cases cured and one improved as a result of treatment. The one case which was improved only was complicated by severe lymphadenopathy and x-ray therapy was necessary in addition to penicillin. It is also interesting to note that one patient with a severe impetigo of the face and scalp had a generalized psoriasis, which did not improve following penicillin therapy.

#### *Group III. Impetiginous Dermatitis*

There were fifteen cases in this group, all showing staphylococcus aureus hemolyticus on cultures, seven of which were combined with streptococcus hemolyticus and one with a trichophyton fungus. The average duration of the disease in this group was fifty-six days. There were thirteen cured and two unimproved. Of the unimproved cases, one was complicated by a severe hyperhidrosis of the hands and feet and the pyogenic infection of these areas showed no response. In the other case the patient had severe fungating granulomatous-like lesions of the face with extensive lymphadenopathy which were diagnosed (by biopsy) as a "severe pyogenic infection". Clinically the lesions resembled a mycotic type of infection although these organisms could not be

\*Major Manson's home address is Richmond, Va.



demonstrated by culture or biopsy. This patient cleared up completely following a short course of potassium iodide and x-ray therapy.

#### Group IV. *Secondarily Infected Trichophytosis Pedis*

The four cases in this group showed staphylococcus aureus hemolyticus on cultures, two of which

infections were primarily due to the "baby skin" which accompanies this condition.

#### Group V. *Generalized Furunculosis*

In this group there were fifteen cases which showed staphylococcus aureus hemolyticus on cultures. One of these was combined with streptococcus hemolyticus and another with staphylococcus

DIAGNOSIS		CAUSATIVE AGENT		DURATION DISEASE	DOSE	CONDITION	DURATION ROSE.	NOTES
1.	<i>Sycosis Vulgaris</i>	Staph. Aureus Hemolyticus		21 mos.	1,000,000 U.	Improved	3 mos.	
2.	"	"	"	15 mos.	"	Cured	13 days	
AVERAGE:		2 Cases Staph. Aureus Hemolyticus		18 mos.	1,000,000	1 Improved 1 Cured	5 1/2 days	
1.	<i>Impetigo Contagiosa</i>	Staph. Aureus Hemolyticus		3 mos.	1,000,000 U.	Cured	29 days	Gen. psoriasis, no resp. to penicil.
2.	" " Face	"	"	2 wks.	"	"	5 days	
3.	" " " "	"	"	2 wks.	"	"	7 days	
4.	" " " "	"	"	1 wk.	"	"	15 days	Elev. of Temp. during penicillin
5.	" " " "	St. H. & "	"	2 wks.	"	"	9 days	
6.	" " Scalp	"	"	4 wks.	1,500,000	"	18 days	Elev. of Temp. during penicillin
7.	" " Face	"	"	3 wks.	1,000,000	"	11 days	
8.	" " Neck & Face	"	"	3 wks.	1,500,000	Improved	16 days	X-ray necessary - lymphadenopathy
9.	" " Face	"	"	1 wk.	500,000	Cured	4 days	
10.	" " Face	"	"	10 days	1,000,000	"	10 days	
11.	" " Face	"	"	10 days	"	"	17 days	
AVERAGE:		11 cases of Staph. Aureus Hemolyticus, 3 of which were combined with Strept. Hemolyticus		21 1/2 days	954,645 U.	10 Cured 1 Imp.	13 days	
1.	<i>Impetiginous Derm.</i>	Staph. Aureus Hemolyticus		2 wks.	1,000,000 U.	Cured	10 days	Had G.C., cured.
2.	" " " "	"	"	3 wks.	"	"	26 days	
3.	" " Hands & Arms	"	"	10 days	700,000	"	6 days	Lymphadenitis & Lymphangitis
4.	" " Hands	St. H. & "	"	6 wks.	1,000,000	"	13 days	
5.	" " Hands	"	"	10 days	"	"	16 days	
6.	" " Hands	"	"	5 days	"	"	16 days	
7.	" " Hands	"	"	2 mos.	1,500,000	"	22 days	
8.	" " Feet, Legs & Arms	"	"	6 wks.	1,000,000	"	15 days	
9.	" " Feet & Hands, St. H. & "	"	"	1 wk.	"	"	18 days	
10.	" " Face & Neck	"	"	3 wks.	"	"	17 days	
11.	" " Generalized	"	"	2 wks.	"	"	7 wks.	
12.	" " Feet & Hands	"	"	1 yr.	2,000,000	Unimproved	60 days	Severe hyperhidrosis hands and feet.
13.	" " Legs & Arms	"	"	4 mos.	1,000,000	Cured	1 mo.	X-ray treatment
14.	" " Face	Trichophyton & "	"	6 wks.	2,500,000	Unimproved	72 days	R.I. X-ray treatment
15.	" " Generalized	"	"	5 wks.	1,000,000	Cured	16 days	
AVERAGE:		15 cases of Staph. Aureus Hemolyticus, 7 of which were combined with Strept. Hemolyticus and 1 with Trichophyton.		56 days	1,246,667 U.	13 Cured 2 Unimp.	26 days	
1.	<i>Infection, Feet, Secondary</i>	St. H. & Staph. Aureus Hemolyticus		1 mo.	1,000,000 U.	Cured	2 mos.	Trench Foot
2.	" " " "	"	"	6 mos.	800,000	"	70 days	
3.	" " " "	"	"	1 mo.	1,000,000	Improved	90 days	Trench Foot
4.	" " " "	"	"	2 mos.	1,500,000	Cured	38 days	
AVERAGE:		4 cases of Staph. Aureus Hemolyticus, 2 of which were combined with Strept. Hemolyticus		75 days	1,075,000 U.	3 Cured 1 Improved	77 days	
1.	<i>Furunculosis, Generalized</i>	Staph. Aureus Hemolyticus		3 wks.	1,300,000 U.	Cured	1 mo.	
2.	" " " "	"	"	5 mos.	1,000,000 U.	"	15 days	
3.	" " " "	"	"	1 mo.	"	"	32 days	
4.	" " Recurrent, of neck	St. H. & "	"	3 mos.	"	"	1 mo.	
5.	" " " "	"	"	1 mo.	"	"	24 days	Patient sensitive to sulfadiazine
6.	" " " buttocks	"	"	7 mos.	"	"	18 days	
7.	" " " "	"	"	6 mos.	"	"	12 days	
8.	" " " " St. Albus & "	"	"	3 mos.	"	"	3 days	
9.	" " " Axillae, both	"	"	10 days	"	"	16 days	
10.	" " " buttocks	"	"	2 wks.	"	"	11 days	
11.	" " " "	"	"	2 mos.	"	"	7 days	
12.	" " " "	"	"	6 mos.	"	"	45 days	
13.	" " " "	"	"	4 wks.	"	"	60 days	
14.	" " " thighs	"	"	2 wks.	"	"	80 days	350,000 Units on hospital ship
15.	" " Generalized	"	"	40 days	"	"	10 days	
AVERAGE:		15 cases of Staph. Aureus Hemolyticus, 1 of which was combined with Strept. Hemolyticus and 1 with Strept. Albus		78-1/3 days	1,020,000 U.	All Cured	26 1/3 days	
1.	<i>Eczematoid Derm., secondarily inf.</i>	St. H. & Staph. Aureus Hemolyticus		30 days	1,000,000 U.	Unimproved	90 days	
1.	<i>Severe bullous impetigo, both hands</i>	Strept. Hemolyticus		1 week	1,000,000 U.	Cured	11 days	
1.	<i>Dermatitis Herpetiformis</i>	Strept. Hemolyticus		3 yrs.	1,000,000 U.	Unimproved	30 days	Sent to duty for 2 wks., recurred

were combined with streptococcus hemolyticus. The average duration of the disease was seventy-five days and the average hospital stay was seventy-seven days. In all of these cases wet dressings and various fungicides were used prior to penicillin therapy. There were three cases cured and one improved. The improved case had trench foot and the repeated

albus. The average duration of the disease was seventy-eight and one-third days. The average period of hospitalization was twenty-six and one-half days and all cases were cured.

#### Group VI. *Miscellaneous*

In the miscellaneous group there was one case of severe infections eczematoid dermatitis, cultures from

which showed staphylococcus aureus hemolyticus and streptococcus hemolyticus. The duration of the disease was thirty days and there was no improvement following penicillin therapy. The second case was one of severe bullous impetigo of both thighs due to streptococcus hemolyticus of one week duration, which cleared up completely in eleven days under penicillin therapy. The third case in this group on which a questionable diagnosis of dermatitis herpetiformis was made will be reported along with the case reports.

#### CASE REPORTS

*Case I.*—This patient had the circinate lesions of impetigo which had been previously treated with ammoniated mercury ointment and other local remedies in our clinic. In view of the slow response to therapy, he was admitted to the hospital on July 1 and received one million units of penicillin. He was discharged on July 8 completely cleared up. Cultures showed staphylococcus aureus hemolyticus.

*Case II.*—This patient was admitted to the hospital on August 17 complaining of a marked irritation of the face. He stated that about ten days

two or three days by a small infected area which gradually spread over the entire front of the face



Case II

as a severe weeping impetiginous dermatitis. Cultures showed staphylococcus aureus hemolyticus. He received wet dressings of boric acid solution for four days without significant improvement and on



Case I



Case III

prior to admission, while in the swimming pool, he received a slight abrasion of the face as a result of a scraping on the cement. This was followed in

August 22 was started on penicillin therapy and was given 1,000,000 units. He was discharged on August 27 completely cured.



*Case III.*—This patient was admitted to the hospital on April 12 complaining of a marked generalized itching with small pustular lesions over the entire body. He stated the condition began in Jan-

uary 1944 with lesions involving the hands, wrists and forearms, associated with a marked itching. On examination the condition appeared very typical of an infected scabies and this cleared up following

treatments, including x-ray therapy, and gradually developed as a severe pyogenic infection with ulceration. He was given 800,000 units of penicillin in four days and discharged to duty. Cultures from lesions showed staphylococcus aureus hemolyticus.

*Case IV.*—This patient stated that beginning about July 3 he developed an acute vesicular rash between the toes of both feet. He was treated in his dispensary with local remedies, then in a Station Hospital from July 28 to August 24 and subsequently transferred to a General Hospital. The feet at that time showed a marked weeping in-



Case IV



Case V

petiginous infection between the toes with extensive maceration and bilateral inguinal adenopathy. He was started on penicillin therapy on August 27 and his feet showed marked improvement and cleared up seven days later. Cultures showed staphylococcus aureus hemolyticus.

*Case V.*—This patient was admitted to the hospital on August 22 complaining of furunculosis of both thighs. The lesions had been present on both buttocks and thighs for about two weeks and were very tender and indurated. He had received prior to admission about 350,000 units of penicillin on the hospital ship and said he was much better. Treatment was continued and patient given an additional 500,000 units. He was discharged on August 30 completely cleared up. Cultures showed staphylococcus aureus hemolyticus.

local treatment. About ten days after admission patient developed an acute vesicular dermatitis of the left foot which responded very slowly to local



Case IV

local treatment. About ten days after admission patient developed an acute vesicular dermatitis of the left foot which responded very slowly to local



*Case VI.*—This patient was admitted to the hospital August 17 for an eruption of the beard region of the face. Patient stated condition started about

hospital on May 23 complaining of a recurrent dermatitis of the thighs and chest of three years' duration. He had a history of recurrent vesicular lesions of



Case VI



Case VII

twenty-two months prior to admission to hospital as an infection of the hair in the beard region with marked itching and burning. He was treated in our clinic for about one month with local remedies and x-ray therapy without improvement. Cultures

the thighs and chest which seemed to come only in warm weather and disappeared completely during the winter. The lesions often became infected which resulted in marked scar formation. Biopsy of an acute lesion showed pathological findings compati-

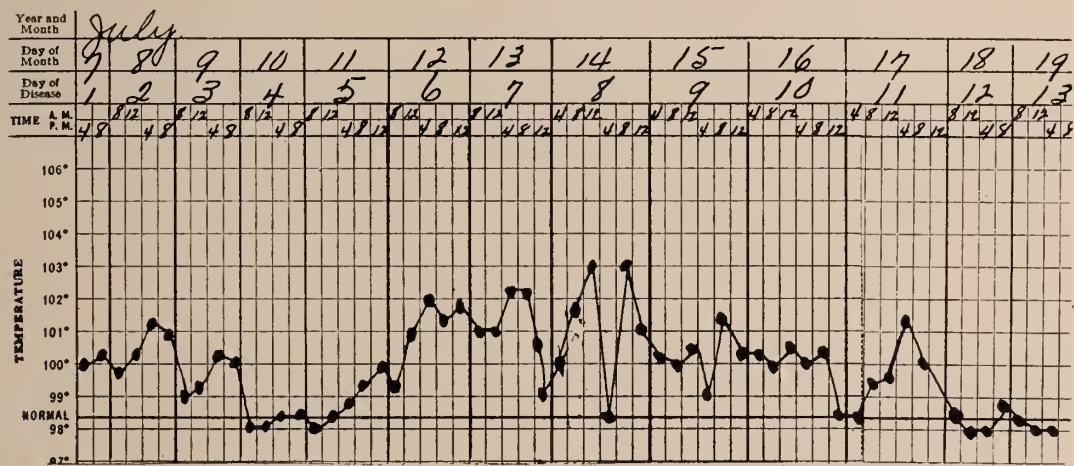


Chart I, Case I

from lesions showed staphylococcus aureus hemolyticus and penicillin therapy was given without improvement.

*Case VII.*—This patient was admitted to the hos-

ble with a dermatitis herpetiformis or pemphigus. A diagnosis of factitial dermatitis was also suggested in this case, but was disproven by a complete examination by the Neuropsychiatric Department.

Cultures showed staphylococcus aureus hemolyticus and patient was given a million units of penicillin. The lesions responded well to this and he was dis-

by chills and fever. These reactions occurred with one brand of penicillin only, and did not occur with penicillin made by other manufacturers.

*Case I.*—Was admitted to the hospital on July 7 for severe impetigo of his face. Penicillin therapy was started at noon and patient continued to run intermittent temperature elevation during the entire treatment, the temperature subsiding completely following cessation of penicillin therapy.

*Case II.*—Had a severe impetigo of the face and neck and also ran an elevation of temperature beginning with penicillin therapy, which stopped promptly with the cessation of penicillin.

*Case III.*—Had a severe impetiginous infection of his scalp and began to run an elevation of temperature within twenty-four hours after the beginning of penicillin therapy, which subsided promptly on cessation of treatment. It is interesting to note in this case that patient had received continuous wet dressings of penicillin for about two weeks prior to admission without improvement.

All three of these cases in which there were reactions got excellent results from penicillin therapy.

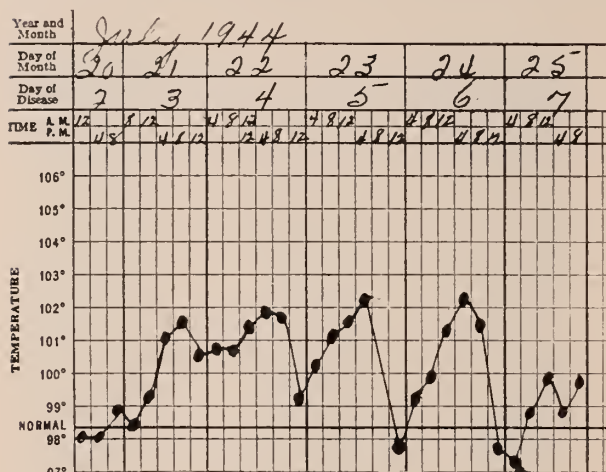


Chart II, Case II

charged to duty on June 12. On July 7 patient was again admitted to the hospital. At that time he had a recurrence of the bullous and deeply ulcerated and

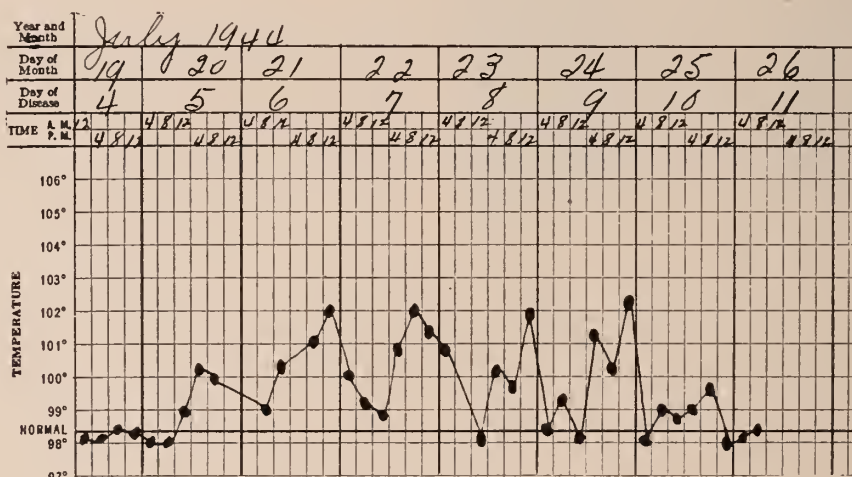


Chart III, Case III

infected lesions of both thighs. He was transferred to another hospital, with diagnosis questionable.

### TYPES OF REACTIONS

Keefer and others in their series on five hundred cases reported chills and fever, thrombo-phlebitis, urticaria, tenderness with muscle pains and headache as the outstanding complications of penicillin therapy. In this series of fifty cases there were only three reactions, all of which were characterized

### SUMMARY AND CONCLUSION

From the study of fifty cases of pyogenic infections of the skin treated with penicillin the following conclusions are justified. Penicillin is most effective in the treatment of infections of the skin due to the staphylococcus and streptococcus. It is a valuable adjunct to skin therapy but by no means a "cure all". In this group of cases there were forty-three cases cured, three cases improved and four unimproved. These results are by no means

conclusive since, due to the Army status of the patients, it is impossible to conduct any type of organized follow-up of the cases.

Though exact figures can not be given, it may be conservatively stated that many days of hospitalization were saved by the use of penicillin, and, further, that a goodly number of these soldiers who were returned to duty would, without penicillin, have been evacuated to the Zone of Interior.

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### Lasker Awards for Fertility Research and Maternal Care.

For the second successive year, two \$500 Lasker awards will be given through the Planned Parenthood Federation of America, Inc., for significant contribution to the improvement of maternal health care and for research in human fertility.

The awards will be:

1. To the scientist making the most significant contribution in research in human fertility—either in the control of conception or in the correction of infertility.

2. To the public health service in a state or community for meritorious action in developing a complete program of maternal health care, including child spacing. The individual recipient of the award will be the executive officer most responsible for the development of the program.

The awards will be presented at the Annual Dinner of the Planned Parenthood Federation of America in New York in January 1946. Deadline for submission of entries for the awards will be December 1, 1945. Any individual wishing to qualify for the awards, or to suggest the name of a scientist, physician or public health official who might do so, should address the Medical Committee, Planned Parenthood Federation of America, 501 Madison Ave., New York 22, N. Y.

### Fluorescent Light Is Not Harmful.

Does fluorescent light possess harmful qualities not found in other forms of artificial illumination? The Council on Industrial Health of the American Medical Association says "No."

Following an investigation by a joint committee on Industrial Ophthalmology, the Council, through its secretary, C. M. Peterson, M.D., reports in the *A. M. A. Journal* of August 25:

"Fluorescent lighting is not harmful to vision. It should not cause eyestrain if properly installed and used."

It was found that the light from fluorescent lamps resembles daylight more closely than that from tungsten-filament lamps. "This color resemblance to daylight," the Council reports, "is a desirable quality," adding:

"Infra-red energy found in fluorescent lighting as now manufactured produces no known physiologic effect except that due to heating. Fluorescent light generates less heat per candlepower than tungsten lamps.

"Glare occurs in any system of lighting. . . . Excessive light may produce symptoms of eyestrain in susceptible individuals regardless of source. Constitutional factors should be corrected as well as the amount and kind of light."



## TORSION OF THE OMENTUM: TWO CASE REPORTS\*

J. G. RAMSAY, M.D., F.A.C.S.,  
Washington, North Carolina.

The omentum has been an object of much interest from the days of antiquity. An early illustration of this is found in the comment of a Roman physician who, when called to see a wounded gladiator, found on examination that the omentum was protruding from an abdominal wound. He removed the extruded portion and the patient recovered, but always afterwards complained that he had a sensation of cold over the abdomen. The conclusion reached by the physician was that the omentum kept the abdomen warm. By virtue of its role as guardian of the abdomen the omentum attempts to segregate inflamed intra-abdominal organs and viscera from the general abdominal cavity; and as a result becomes involved with them. Also, like the other intra-abdominal organs, it becomes subject to various disease conditions, such as solid tumors, cysts, inflammatory conditions, tuberculosis, and torsion, the latter being the subject of these case reports.

Torsion of the omentum is of interest chiefly because it is a comparatively rare condition. Seldom is a correct diagnosis made pre-operatively, as the symptoms might fit many acute intra-abdominal lesions. The first and most marked symptom is pain, the onset being either gradual or sudden; then we find tenderness, followed by rigidity, and often nausea and vomiting occur.

The classification suggested by Morris is quite comprehensive for an understanding of torsion and is classified as complete and incomplete. The incomplete represents the chronic recurring varieties which are occasionally evidenced by fibrotic areas and omental balls found during laparotomies. Many vague, recurring abdominal pains might have this variety as their source instead of being due to chronic appendicitis, cholecystitis, and indigestion, as usually supposed.

Each type under the Morris classification would have identical subtypes, each having the same causative factors underlying the condition, the difference being that the incomplete resolves itself but shows evidence clinically and pathologically of what has occurred. The incomplete might become at a later

date complete, emphasizing the importance of a thorough examination of the omentum during the course of an abdominal operation.

Only complete torsion with its subtypes will be taken up, after the reference just made relative to the incomplete.

- (1) Acute torsion with hernia.
  - (a) Hernial.
  - (b) Hernial and abdominal combined.
- (2) Acute torsion without hernia (purely abdominal).
  - (a) Primary or idiopathic (unipolar).
  - (b) Secondary (unipolar and bipolar).

By the unipolar it is understood that the structure is fixed at one point only, swinging free like the plumb line. Bipolar would mean that the structure was fixed at two or more points with the intervening part or parts swinging free to be acted upon by outside influences.

Hernial refers to the type found entirely within the sac, while hernial and abdominal combined would mean that type in which not only was torsion present in the sac but extended up into the abdomen.

The primary or idiopathic type without hernia is unipolar and no demonstrable mechanical factor is found. The secondary acute torsion without hernia may be either unipolar or bipolar. An illustration of the unipolar of this type would be a cyst of the omentum swinging free predisposing to torsion, while in the bipolar type any inflammatory condition of an intra-abdominal organ might cause an adhesion of the omentum, and be the predisposing cause.

Torsion with hernia comprises by far the largest group of cases and the torsion usually occurs on the right side due to many factors. Among these might be mentioned that right inguinal hernia is more common than left, that the appendix, gall-bladder, duodenal, and gastric ulcers are found on the right side, and that the right side of the omentum is longer than the left. Torsion is found most often in males, usually in middle age, and in those inclined to obesity.

Several factors may be responsible for its production, among which might be mentioned postural

\*Read before the Seaboard Medical Association of Virginia and North Carolina at its 49th annual session at Wilson, N. C., December 5-7, 1944.

changes of the body, peristalsis, action of the abdominal muscles, movement in the objects to which the omentum is fixed (such as tumors), hernia, anatomy of the omentum with irregular deposits of fat and the right side longer than the left, tortuosity of the omental veins in comparison with the arteries, trauma to the abdominal wall, coughing and violent exertion.

Though a correct diagnosis probably will not be made, there is seldom doubt of the presence of a surgical abdomen which demands exploration. On section hemorrhagic exudate is first encountered, then the omentum fixed at one or more points usually, though occasionally free, twisted on itself, and its appearance due largely to the amount of interference with its blood supply—that is varying from hyperemia to gangrene. The treatment is of course obvious—resection of the non-viable portions.

Two case records of this condition are cited below, one in conjunction with hernia and one of abdominal torsion without hernia.

The first, Mr. J. T., was admitted to Tayloe Hospital 3/19/44 at 1:20 A. M. with a chief complaint of pain in lower left abdomen. The history of present illness was as follows: He was awakened early the morning of March 18, 1944, with severe colicky pain in the lower left abdomen. He had a bowel movement a short time later but this did not relieve the pain. He consulted his family physician who thought that, by straining, he had torn the opening of a hernia on the left side, and advised him to lie down and take it easy. He was nauseated all day but never vomited. The pain became increasingly severe until he came into the hospital for relief of condition. He stated that for sometime he had had some discomfort in the left lower abdomen and that about five years ago he had a somewhat similar attack which passed off after a few days' rest in bed. He had had a bad cough and cold since March 12. Always suffered with constipation. The hernia on the left side has been present since 1935. Stated that he had a hernia on the right side in childhood but this has never come down since he has been grown. He had had an abscess of the left lower first molar tooth for over a week and this had been draining considerable pus. No. G.U. symptoms. No cardiovascular symptoms.

*Physical Examination.*—Patient was a well developed and nourished adult white male of 33. He

was very pale and appeared to be extremely ill. He lay with knees drawn up as if in considerable pain, and the skin was beaded with cold perspiration. He was breathing rather rapidly. No cyanosis, jaundice or skin eruption was present. Eyes: Pupils equal and reacted normally. Ocular and palpebral conjunctivae were injected and the nares congested. Teeth were in very poor condition. Marked pyorrhea and an abscess of the left first lower molar present. There was a marked post-nasal drip, and the pharynx was injected. Chest: Wheezing and coarse rales were heard over the entire lung area, both sides, but no consolidation was found by examination or fluoroscopy. Heart: Normal. Blood pressure 124/80. Abdomen: Slightly distended. No organs nor masses palpable. Patient was somewhat rigid over the entire abdomen, but more so over the left lower abdomen where he was exquisitely tender, so much so that he could hardly bear the weight of the hand on it. There was a hernia present on the left side which came out slightly on straining and which he stated was complete. The right inguinal ring was enlarged.

Admission temperature was 99.3, pulse 98, and respiration 26. The white blood count was 19,600, and urinalysis negative.

Impression: (1) Possible volvulus; acute appendicitis, or diverticulitis; (2) Acute bronchitis.

*Operative Notes:* Under spinal anesthesia the abdomen was opened through right paramedian incision. Difficulty was encountered in going through as the abdominal wall was unusually thick with fat. After entering the peritoneal cavity it was found that the intestines were adhered together and were adherent to the abdominal wall. With a great deal of difficulty adhesions were dissected free enough to open the incision down to just above the bladder. It was found that there was a great deal of bloody fluid in the abdomen and that this was coming from the left side of the abdomen. Due to adhesions the incision was inadequate and was increased for an inch to the left of the navel. It was then shown that there was a band running from the omentum down to what appeared to be a large sac just over the internal opening of the inguinal canal on the left side. This band appeared to contain blood at the point nearest the omentum and was fibrous at the attachment to the sac. The sac itself had a base about 2 inches broad in every diameter and ap-

parently contained something which could not be made out; consequently, it was not thought wise to open into this due to the extremely broad base and the condition encountered in the abdomen. The cord was ligated with No. 1 catgut close to the sac and divided. The omentum was then brought up in the wound and was found to be gangrenous for at least half of its extent due to a marked torsion, being twisted on itself at least eight times. Clamps were placed above the place where the omentum had twisted and the omentum resected. Clamps were replaced with 000 chromic catgut ties. Adhesions around the appendix were clamped, divided and ligated, and the appendix removed. The appendix on inspection showed marked injection of the serosa. The remainder of the omentum was then brought down over the intestines and the abdomen closed in layers without drainage. No explanation for the old peritonitis was elicited from the history or from the operative findings.

Following operation, patient's chief difficulty was with his bronchitis. He was put on sulfadiazine and the bronchitis cleared up rapidly. He was discharged from the hospital on the eleventh post-operative day with wound well healed. He was seen ten days ago and there has been no recurrence of the hernia since operation though both inguinal rings are large. The pathological report on the tissue removed was "Torsion of omentum with gangrene—acute periappendicitis".

The second case was S. L., a young girl, who was admitted to Tayloe Hospital 7/11/44 with a chief complaint of "pain in lower right abdomen". She gave the following history: Shortly after waking up that morning she began to be troubled by epigastric pain which by afternoon settled into the lower right abdomen and remained there. She had had two movements during the day, slightly loose but not watery. She usually had one to two movements a day. Had not been nauseated and had not vomited. Had never had any trouble similar to this in the past. No pulmonary, cardiovascular or G.U. symptoms. Appetite and digestion good until this illness. Had been given no laxative.

*Physical Examination.*—Patient was a well developed and nourished white child of 9 years. There was no dyspnea, cyanosis, jaundice or skin erup-

tion present. The heart and lungs were negative. Abdomen: Normal contour. Considerable adipose tissue present. Patient slightly tender over the left lower abdomen and there was some rebound tenderness from left to right. Patient was exquisitely tender over the right lower abdomen and there was marked rigidity present. No organs or masses palpable.

Admission Temperature was 99.6, pulse 100, and respiration 26. The white blood count was 13,700, and urinalysis negative.

Impression: Acute appendicitis.

*Operative Notes:* Under general anesthesia the abdomen was opened through a 2 inch McBurney incision. There was a mass felt with the examining finger immediately upon opening the peritoneum. It appeared to be omentum and it was thought to be wrapped around an acute appendix. The mass was brought out of the wound and there was found to be torsion of the omentum involving about 3 inches of the omentum present. There were four distinct twists present and the omentum was gangrenous beyond the twisted portion. There was also present a large amount of dark, free, hemorrhagic fluid in the peritoneal cavity. Clamps were placed on the omentum and this portion resected, hemostasis being secured with 00 chromic catgut ligatures. The appendix was then brought up into the wound, but was found not to be inflamed. This was removed in the usual manner. The ileum was then inspected for a distance of 3 feet from the ileocecal junction and enlarged glands were found in the mesentery. Otherwise, no further pathology was encountered. This was returned to the abdomen and the abdomen closed without drainage.

Post-operative course uneventful, patient leaving hospital on seventh post-operative day.

Pathological report on tissue removed—"Hemorrhagic fatty tissue, compatible with omental infarction. Fibrosis of the appendix."

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*Tayloe Hospital.*



## CASE REPORT OF MATERNAL DEATH

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MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

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This is a case of a 15 year old colored primi-gravida who made her first prenatal visit to a clinic at the time she was six months pregnant. One other visit was made to the clinic a month later. One month following that time she delivered a premature living child at home. A midwife attended the patient postpartum. The course was uneventful until the ninth day, when she began to have fever and pain in her left leg. A physician was called and made a diagnosis of "Milk Leg". Improvement followed sulfathiazole administration.

The patient died on the eighteenth postpartum day, nine days after the onset of illness. A diagnosis of "Pulmonary Embolism" was made by the physician.

This case has been classified by the committee as a preventable obstetrical death.

It is said that one out of every three patients with phlebitis will have a pulmonary embolus and one out of twenty-five will have a fatal pulmonary embolus. The death rate from embolism as a result of deep phlebitis under fifty years of age is very low. If this be true, one would not expect a fatal embolus in this patient fifteen years of age.

In discussing this case, it is not necessary to go into the prevention of Thrombophlebitis in home deliveries. However, attention is called to the importance of frequent examinations of the lower extremities of our obstetrical cases in order to be able to determine early the presence of Thrombophlebitis.

The presence of tenderness in the calf, Homan's sign or tenderness along the course of the vein, any dilated veins or edema with or without pain and

temperature is sufficient evidence to institute active treatment.

It has been said that Thrombophlebitis is no longer observed passively but is now accepted as a disease that must be vigorously treated.

We are all familiar with the standard treatment of heat, elevation and bed-rest for six weeks. To this has been added the Sulfonamides with very questionable results. Novocain block of the Lumbar Sympathetics has received favorable comments and has been accepted by many as a rational procedure.

Heparin and Dicumarin have also created a great deal of interest and their uses are advocated strongly by some writers.

Ligation of the femoral vein has also been received favorably and appears as the most rational method if the object of our treatment is to prevent a fatal pulmonary embolus. I cannot see how mechanically any of the first three methods mentioned could give you any assurance of safety.

It appears that every case of Thrombophlebitis or phlebothrombosis of the lower extremities which develops in the home whether following an obstetrical, surgical or medical condition should be removed by ambulance to a hospital for treatment. Here expert consultation would be useful.

This committee is not in position to decide on the exact treatment which should have been given this case. A well-trained consultant might have advised vein ligation or other treatment. It is quite likely that if this plan had been followed, this fifteen year old woman would not have died from pulmonary embolus.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,  
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for July, 1945, as compared with the same month in 1944, and for the period of January through July, 1945, compared with the same period in 1944, follows:

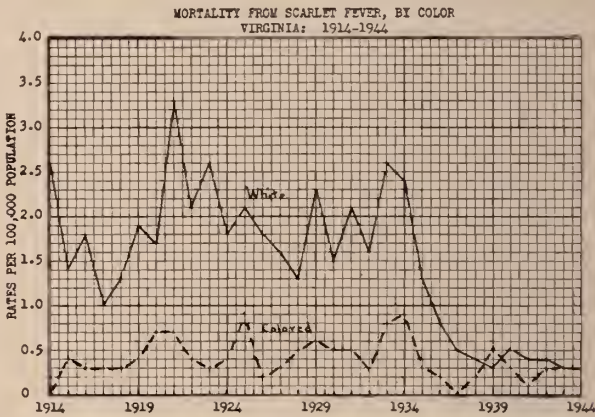
	July 1945	July 1944	Jan.- July 1945	Jan.- July 1944
Typhoid and Paratyphoid Fever	16	15	61	68
Diarrhea and Dysentery	790	1,585	2,373	3,120
Measles	28	315	1,213	16,970
Scarlet Fever	71	77	2,613	1,927
Diphtheria	11	7	144	124
Poliomyelitis	62	125	89	139
Meningitis	13	32	177	436
Undulant Fever	7	3	18	29
Rocky Mountain Spotted Fever	34	21	52	41
Tularemia	6	7	29	35

SCARLET FEVER IN VIRGINIA DURING THE  
PAST THIRTY YEARS

The mortality rate from scarlet fever in Virginia dropped from 1.8 per 100,000 population in 1914 to 0.3 in 1944—a decrease of 83 per cent. The decline, however, has not been uniform throughout the 30-year period. For the first 20 years, from 1914 to 1934, there was much fluctuation in death rates, with no appreciable upward or downward trend. After 1934 the rate dropped precipitately until in 1937 it reached a new low of 0.3 per 100,000 population. Since 1937 the rates have shown

shown the white and colored rates for the past thirty years.

During the five-year period 1914-1918, an annual



average of 31 white persons and two colored persons died from scarlet fever in the State. During the past five years, an average of 10 white persons and 2 colored died from this cause.

Although scarlet fever is one of the principal communicable diseases of childhood, cases and deaths show a wide range in age distribution. There were 2,969 cases of scarlet fever reported in the State in 1944, in comparison with 1,842 during the previous year. The table below shows cases and deaths by age groups for the past year.

Although case reporting is not considered to be

CASES AND DEATHS FROM SCARLET FEVER IN THE STATE OF VIRGINIA 1944

	Color	All Ages	Under 1 year	1-4 years	5-9 years	10-14 years	15-19 years	20-39 years and over	40 years and over	Unknown
CASES	White	2,588	27	463	1,018	481	154	286	25	134
	Colored	147		43	50	24	7	20	2	1
	Unknown	234								234
DEATHS	White	6			2	1	1	1	1	
	Deaths	2		1					1	

slight variability, coming within a maximum of 0.5 and a minimum of 0.3.

The death rate for the white race was much in excess of the colored until the year 1939, in which year the colored rate exceeded the white. During the past three years there has been little difference in rates between the races. On the Graph below are

100 per cent, a very low fatality rate is seen in the State during the past ten years. In 1944 the case-mortality rate was 0.26 per 100. In other words, less than one death occurred from this cause in each 100 cases, or less than three deaths in each 1,000—due apparently to the mild form of the disease existing at present.

## MISCELLANEOUS

## Constructive Program for Medical Care

## AMERICAN MEDICAL ASSOCIATION

This platform was adopted by the Council on Medical Service and Public Relations and the Board of Trustees of the American Medical Association on June 22, 1945

## PREAMBLE

The physicians of the United States are interested in extending to all people in all communities the best possible medical care. The Constitution of the United States, the Bill of Rights and the "American Way of Life" are diametrically opposed to regimentation or any form of totalitarianism. According to available evidence in surveys, most of the American people are not interested in testing in the United States experiments in medical care which have already failed in regimented countries.

The physicians of the United States, through the American Medical Association, have stressed repeatedly the necessity for extending to all corners of this great country the availability of aids for diagnosis and treatment, so that dependency will be minimized and independence will be stimulated. American private enterprise has won and is winning the greatest war in the world's history. Private enterprise and initiative manifested through research may conquer cancer, arthritis and other as yet unconquered scourges of humankind. Science, as history well demonstrates, prospers best when free and unshackled.

## PROGRAM

The physicians represented by the American Medical Association propose the following constructive program for the extension of improved health and medical care to all the people:

1. Sustained production leading to better living conditions with improved housing, nutrition and sanitation which are fundamental to good health; we support progressive action toward achieving these objectives:

2. An extended program of disease prevention with the development or extension of organizations for public health service so that every part of our country will have such service, as rapidly as adequate personnel can be trained.

3. Increased hospitalization insurance on a voluntary basis.

4. The development in or extension to all localities of voluntary sickness insurance plans and provision for the extension of these plans to the needy under the principles already established by the American Medical Association.

5. The provision of hospitalization and medical care to the indigent by local authorities under voluntary hospital and sickness insurance plans.

6. A survey of each state by qualified individuals and agencies to establish the need for additional medical care.

7. Federal aid to states where definite need is demonstrated, to be administered by the proper local agencies of the states involved with the help and advice of the medical profession.

8. Extension of information on these plans to all the people with recognition that such voluntary programs need not involve increased taxation.

9. A continuous survey of all voluntary plans for hospitalization and illness to determine their adequacy in meeting needs and maintaining continuous improvement in quality of medical service.

10. Discharge of physicians from the armed services as rapidly as is consistent with the war effort in order to facilitate redistribution and relocation of physicians in areas needing physicians.

11. Increased availability of medical education to young men and women to provide a greater number of physicians for rural areas.

12. Postponement of consideration of revolutionary changes while 60,000 medical men are in the service voluntarily and while 12,000,000 men and women are in uniform to preserve the American democratic system of government.

13. Adoption of federal legislation to provide for adjustments in draft regulation which will permit students to prepare for and continue the study of medicine.

14. Study of postwar medical personnel requirements with special reference to the needs of the veterans' hospitals, the regular army, navy and United States Public Health Service.



### Benzyl Benzoate Effective in Pruritus Ani.

Pruritus ani has long been one of the conditions most difficult in which to obtain results. Twenty-five per cent solution of benzyl benzoate locally applied has brought as much, if not more, relief to pruritus ani than any other drug tried. One advantage of the benzyl benzoate solution is that it is not greasy and is easily applied. Most anti-pruritics stain the clothes badly, and a non-staining and easily applied drug is more apt to solicit the patient's cooperation.

The use of this solution in generalized pruritus is established and its success in generalized pruritus prompted its use in pruritus ani. Locally applied three times daily, the results obtained in two cases of moderate to severe symptoms brought as good results as x-ray therapy.

This is written in the hope that pruritus ani sufferers can be assured of another drug to help alleviate the distressing symptoms—burning, itching, and associated insomnia.

A. J. Russo, M.D.,  
Salem, Virginia.

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## WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

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*President*.....MRS. PAUL C. PEARSON, Aylett  
*President-Elect*.....MRS. P. M. CHICHESTER, Abingdon  
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*Chairman, Press and Publicity*.....MRS. A. G. SHETTER,  
Richmond.

### Annual Meeting.

It has been decided that the annual meeting of the Auxiliary to Medical Society of Virginia shall be held in Richmond, at the Academy of Medicine Building, Tuesday, October 16, at 11:00 A. M.

Since present conditions make it impossible for us to meet at the same time and place as the Medical Society, and since they are not having a full meeting, the Advisory Council has approved the plan for the Auxiliary to hold a full meeting, as usual, at a different time and place.

This will not be a meeting composed of only Board members and delegates, but the entire membership will be welcomed. All necessary business will be transacted, including the election of officers.

Each Auxiliary President and Chairman is to have her report ready, and mailed according to instructions which will be sent each group.

We regret not being able to meet with the doctors, but since circumstances over which we have no control make this impossible, every effort will be made to fill this meeting with interest. It can be held as a regular rather than a special meeting because our membership is smaller, and we know that our number to attend from out of the city will not exceed the O.D.T. requirements.

MRS. PAUL PEARSON, *President*.

### The Woman's Auxiliary to The Northampton-Accomac Medical Societies

Enjoyed their second annual picnic outing as the guests of Mrs. W. L. Cosby at her attractive cottage "Funfrus" at Silver Beach, on July 10. A delicious luncheon was followed by a social period and swimming.

Eighteen members and nine guests enjoyed Mrs. Cosby's hospitality.

# VIRGINIA MEDICAL MONTHLY

*Official Publication of the Medical Society of Virginia*

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,  
*Editor Emeritus*

M. PIERCE RUCKER, M. D.,  
*Editor*

AGNES V. EDWARDS  
*Business Manager*

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond 19, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, \$2.00. Single copies 25c.

## A State-wide Gonococcus Service

LABORATORY diagnosis of gonorrhoea falls far short of the exactness that doctors and the public generally expect of laboratory methods. The time-honored smear has proven so inadequate that many clinicians have given up smears entirely and rely upon culture methods for diagnosis. The technical difficulties of the culture method in the past have limited its use to large hospitals and health centers where the specimens can be taken to the laboratory promptly. Bergsma and Stein of the Bureau of Venereal Disease Control of the New Jersey State Department of Health developed a method, using horse plasma-hemoglobin agar slants, by which 156 positive cultures were obtained from mailed specimens taken from patients whose concurrently prepared smears yielded only 71 positives. On the basis of this work the New Jersey State Health Department has set up an experimental program on a state-wide scale. The Department has established central laboratories and culture stations. The laboratories prepare the media and assemble the mailing outfits. The Culture stations distribute the containers, receive the specimens, incubate them for 18 to 24 hours at 37° C. and forward them to the central laboratories. Here the tubes are separated into three groups: (1) no growth, (2) moderate growth with isolated colonies, and (3) overgrowth. The first group is incubated for another 24 hours. If there be then any growth the tubes are treated as either group 2 or 3 as the case may be. The tubes of group 2 are inspected for colonies with a morphology typical of the gonococcus. These are subcultured and are also treated with oxidase reagent and are examined microscopically. The oxidase reagent indicates likely colonies when there are none that are morphologically characteristic. The tubes of group 3 are treated with oxidase reagent and in this way the laboratory worker can "fish" likely material for subculture. For a positive report the subcultures must possess the colonial morphology typical of the gonococcus, be oxidase-positive, contain gram-negative diplococci, and ferment only dextrose when inoculated into sugar media.

The experiment is evidently a success for in two years the volume of mailed specimens has increased to a rate of about 13,000 per year. Of 616 positive specimens

only 86 (14 per cent) were not detected by the mailed culture method, whereas 299 (48.5 per cent) were missed by the smear examinations. New Jersey is to be congratulated upon inaugurating a much needed service.

### The Social Security Amendments of 1945

THE bill, S 1050, with the above title which Senator Wagner introduced in the Senate on May 24th and which Representative Dingell introduced in the House under the number H.R. 3293, is 185 pages in length. The editor of the *New York State Journal of Medicine* describes the new Wagner-Murray-Dingell bill epigrammatically as follows: "The new bill seems to us to be just as arbitrary, fully as dangerous, and far more expensive than previous versions. We do not believe that it would be acceptable to the membership of the Medical Society of the State of New York either as physicians whom it would regiment or as citizens whom it would bankrupt." Senator Wagner claims to have benefited greatly in formulating his bill by the constructive advice and suggestions of practicing physicians. If this is the reaction of the profession in Senator Wagner's own state, we wonder where he went for his advice.

### The Gas Bacillus in Obstetrics

THIS little bit of almost undifferentiated protoplasm, so small that it takes one billion of them to make a mass that can be seen by the naked eye, goes by many aliases: Achalme's bacillus, *Bacillus enteritidis sporogenes*, *Bacillus perfringens*, *Bacillus phlegmonis emphysematosae*, *Bacillus welchii*, *Clostridium aerogenes capsulatum* and Vallon-Zaber bacillus. Dr. William H. Welch, who discovered the organism, gave it the name, *Bacillus aerogenes capsulatum*. He used to say that the name was descriptive, although it violated the canon of good nomenclature. It is a normal inhabitant of the intestinal tract of man and is found in the vagina of 6 to 8 per cent of pregnant women. It is anaerobic and bears spores and is as hard to kill as a German or a Jap. Its chief function in life is to produce gas, but on occasion it may produce deadly toxins, capable of producing jaundice, hemolysis and circulatory collapse.

Like the Germans and the Japs, the gas bacillus may live for generations without doing any harm and then for some unknown reason, it starts on a rampage of death and destruction. An army of gas bacilli may hide on a pubic hair, where it can be more dangerous than a Bengal tiger hiding in the bamboo. We have seen two serious post-abortion infections within the past year. It has been known to kill in 16 hours. One-half of those infected die within four days.

The rapidity with which bacteria multiply under favorable circumstances is truly astounding. Mathematically inclined persons figure that a single cell will produce 64,000 in 8 hours and some 1,000,000,000 in 15 hours. In 35 hours the progeny of this single cell will occupy a space of 1,000 cubic metres. Just how much gas an individual gas bacillus can make has never been calculated, so far as we know. However, in the aggregate, it is enormous. Within a few hours after death from gas bacillus infection, a body may double its size. A question we would like to ask the experts is: If a woman goes to an abortionist, how many generations of the *Clostridium welchii* will it take to make her as big as a balloon and as dead as a doornail?



## PRESIDENT'S MESSAGE

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Veterans Service for Medical Officers Sponsored by  
Medical Society of Virginia

AT a recent meeting of the Department of Clinical and Medical Education of the Medical Society of Virginia it was unanimously approved that a determination be made of the post-graduate educational needs of returning medical officers, from Virginia, who are now or have been in military service. To direct this survey, the Committee for the State Society has appointed Dr. Andrew D. Hart, Jr., a member of the University of Virginia Medical Faculty and a former officer of the Medical College of Virginia's 45th General Hospital. An attempt is being made to communicate with each medical officer through the accompanying letter and questionnaire, which have been mailed to doctors listed by the State's Selective Service Office as comprising the quota from Virginia. Owing to recent changes in military addresses some delay and misdirection is unavoidable. The Medical Society will be grateful for information as to changes of address of Virginia doctors in the armed forces.

H. B. MULHOLLAND, M.D., *President.*

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## TO MEDICAL OFFICERS FROM THE STATE OF VIRGINIA:

At a recent meeting of the Department of Clinical and Medical Education of the Medical Society of Virginia, it was unanimously approved that a determination be made of the post-graduate educational needs of returning medical officers, from Virginia, who are now or have been in military service. The State Medical Society will sponsor a program which, through this Office, attempts to:

1. Determine the type, extent and field of post-graduate education desired.
2. Provide a central office of information for returning medical officers, where questions as to post-graduate study and placement may be given attention.
3. Assist in every way practical your return to civilian status.

A copy of this letter and attached questionnaire is being sent to each medical officer from the State, at the latest available military address, or to the obtainable home address. Your cooperation in responding promptly, whether you desire help or not, is most necessary to the success of this survey. We realize that many doctors may not wish assistance in their plans for the future, but please return the questionnaire anyway; we need your reply.

It is estimated roughly that of 1,000 doctors from Virginia now in the Service, from 300 to 500 will want some kind of training or review before returning to civilian practice or work elsewhere. From personal experience at home and overseas, and from many conversations with medical officers, I am convinced that each of us feels an urgent need for some way of catching up on the years we have missed.

It is this Department's purpose not only to survey your post-graduate needs and make plans for their fulfillment, but to furnish an individual and personal service. Therefore, in addition to completing the questionnaire, I trust you will feel free to write me a personal letter in regard to any way that this office can help you now and on your discharge from the Service. Any comments or suggestions will be appreciated. I can assure you that the Medical Society of Virginia is sensitive to your needs, proud of your record, and aware of its obligation to render you practical assistance in every way possible.

ANDREW D. HART, JR., M.D.,  
*Lt. Colonel, MC, AUS, Ret.*

THE MEDICAL SOCIETY OF VIRGINIA  
Department of Clinical and Medical Education  
VETERANS SERVICE QUESTIONNAIRE

Name \_\_\_\_\_ Rank \_\_\_\_\_ Age \_\_\_\_\_ Years Service \_\_\_\_\_

Organization \_\_\_\_\_ Address \_\_\_\_\_

Home Address \_\_\_\_\_

Year of Graduation in Medicine \_\_\_\_\_ School \_\_\_\_\_

1. Residence, location, and type of practice prior to entry into Service \_\_\_\_\_

General Practice? \_\_\_\_\_ Specialty? \_\_\_\_\_

Residency? (type) \_\_\_\_\_ Internship? \_\_\_\_\_

State Position? \_\_\_\_\_ Federal Position? \_\_\_\_\_

Industrial Med.? \_\_\_\_\_ Group Practice? \_\_\_\_\_

Teaching (part time)? \_\_\_\_\_ Other? \_\_\_\_\_

2. Do you desire or intend to remain in the Army, Navy, Public Health Service or Veterans Administration after the war? \_\_\_\_\_ If yes, underline which one.

3. Do you desire or intend to return to practice in your previous location? \_\_\_\_\_

Elsewhere? \_\_\_\_\_ If elsewhere, state type and size of locality desired \_\_\_\_\_

4. Do you desire or intend to return to the same type of practice? \_\_\_\_\_

If a change in type of practice is contemplated, please indicate \_\_\_\_\_

5. Do you desire post-graduate work after leaving the Service? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please indicate what type:

Refresher Courses? \_\_\_\_\_ Fellowship in Special Subject? \_\_\_\_\_

Residency? \_\_\_\_\_ Rotating Internship? \_\_\_\_\_

Assistantship? \_\_\_\_\_ Other? \_\_\_\_\_

6. Please specify the particular *field* in which above work is desired, i.e., Medicine, Surgery, Orthopedics, Psychiatry, Ophthalmology, etc. \_\_\_\_\_

7. Please estimate, if possible, the length of time you will be willing to devote to post-graduate study. \_\_\_\_\_

8. Suggestions or comments \_\_\_\_\_

Please reply to:

Dr. Andrew D. Hart, Jr.  
Box 1725, University Station  
Charlottesville, Virginia

## Societies

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### **The Mid-Tidewater Medical Society**

Held its regular quarterly meeting at Urbanna on July 24, with Dr. W. S. Cox presiding. Resolutions of respect were adopted for Dr. W. P. Jones, a past president of the Society. A schedule of fees was discussed and adopted, and delegates to the meeting of the House of Delegates of the State Society were named.

Lt. Col. Charles M. Caravati, who is located at the Woodrow Wilson Hospital in Staunton, addressed the Society on "Tropical Diseases Likely to be Seen by the General Practitioner on Soldiers Returned from the Tropical War Fronts".

The Society will meet again at Urbanna on October 9.

### **The Patrick-Henry Medical Society**

Held its regular quarterly meeting in Martinsville on July 13. At this time, delegates were named to the Roanoke meeting of the House of Delegates of the Medical Society of Virginia. After the business session, Dr. Everett O. Jeffreys, assistant professor of Surgery in charge of Neuro-Surgery at the Bowman-Gray School of Medicine in Winston-Salem, N. C., gave an interesting illustrated lecture on Cranio-Cerebral Trauma.

Dr. E. N. Shockley of Bassett and Dr. T. Henry Dickerson of Martinsville are president and secretary, respectively.

### **Augusta County Medical Society.**

The following officers were elected at a meeting of this Society held on August 1 in Staunton: President John H. Guss, Staunton; and vice-presidents, Drs. George E. Stone, Staunton; F. P. Floyd and A. M. McLaughlin, Waynesboro.

### **The Buchanan-Dickenson County Medical Society**

Held a supper meeting at the Grundy Hospital on July 18. Delegates and alternates to the meeting of the House of Delegates of the State Society were appointed, following which Mr. Farnsworth of Roanoke showed a color film by Abbott and Company on Blood and Plasma Bank for Small Hospitals.

T. C. SUTHERLAND, *Secretary*.

### **Wise County Medical Society.**

This Society met on August 10 as dinner guests of the secretary, Dr. T. J. Tudor, Norton. There was an attendance of twenty-three. Drs. Givens, Barton and Tudor led a discussion on Poliomyelitis, and Dr. F. D. Winner spoke on Prostatic Disease and Hip Joint Injuries and demonstrated newer surgical instruments. He then showed color films of some surgical cases and scenery in Virginia and Pennsylvania. Dr. C. L. Harshbarger is President of this Society.

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## News

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### ***FULL MEETING OF HOUSE OF DELEGATES CALLED***

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In view of the fact that the Office of Defense Transportation has changed restrictions, it is now possible to hold a convention with an attendance of 125 to 150. Dr. Mulholland, President of the Medical Society of Virginia, is, therefore, asking the component societies to elect their full number of delegates for a meeting of the House of Delegates in Roanoke, October 22 and 23. Chairmen of Committees are also asked to arrange to attend.

There will be no general meeting this year even if later restrictions on conventions are released. It would be impossible at this time to work up a satisfactory program and to obtain guest speakers.

All component societies are urged to elect and send their delegates to Roanoke. Reservations should be made immediately at the Hotel Roanoke.



### Virginia State Board of Medical Examiners.

Applicants successfully passing the Board at the June 1945 meeting are:

Miller Shannon Allen, Jr., New York City.  
 Melvin Gustavus Alper, Philadelphia, Pa.  
 Marshall David Baxter, Charlottesville.  
 Lewis F. Bell, Charlottesville.  
 William Earl Bloomer, Atlanta, Ga.  
 Robert Stewart Boyd, Charlottesville.  
 Franklin Talmadge Buchanan, Charlottesville.  
 Ann Butterworth, Charlottesville.  
 Samuel Henley Carter, Charlottesville.  
 Charles Lucian Crockett, Jr., Charlottesville.  
 Wilber Russell Ellis, Jr., Wakefield.  
 Ponciano I. Ferraraccio, Bluefield, W. Va.  
 William Cary Fleming, Charlottesville.  
 Francis Wilbur Fitzhugh, Jr., Brooklyn, N. Y.  
 Charles Irving Fuller, Jr., Norton.  
 Martin Edward Gallagher, Norfolk.  
 George Benjamin Garis, Nashville, Tenn.  
 Louis Sparkman Graham, Jr., Pittsburgh, Pa.  
 Herbert Durant Gullick, Greenville, S. C.  
 John Pinckney Harloe, Charlottesville.  
 Myers H. Hicks, Florence, S. C.  
 Anne Liese Lee, Norfolk.  
 Herbert M. Levitt, Petersburg.  
 David Benjamin Levy, Suffolk.  
 William Dulaney Lewis, Jr., Richmond.  
 Frank Gold Lindsay, Jr., Portsmouth.  
 Leonidas R. Littleton, Jr., Arlington.  
 Stephen Brooks Longley, Charlottesville.  
 David Smythe McKee, Charlottesville.  
 Laurance Samuel Miller, Bridgewater.  
 William R. Nelson, Nashville, Tenn.  
 Mason Romaine, III, Petersburg.  
 Milton Segal, Pittsburgh, Pa.  
 George Ward Shannon, Charlottesville.  
 Donald Shotton, Charlottesville.  
 Acors William Thompson, Charlottesville.  
 Frederick Victor Vance, Jr., Bristol, Tenn.  
 Edwin Booth Vaden, Gretna.  
 Evelyn Clark Wade, Roanoke.

The following were granted license through reciprocity:

Gordon H. Anderson, Virginia Beach.  
 Rudolph Frank Antoncic, Pulaski.  
 Clifford Edward Bagley, Arlington.  
 Andrew W. E. Bassett, III, (Col.), Hampton.  
 Dulcie Blunden-Morris, Toloma Park, Md.  
 Joseph Bogan, Washington, D. C.  
 Ralph Woods Bohnsack, Pulaski.  
 William Christian Calloway (Col.), St. Louis, Mo.  
 Louis Bernard Castell, Arlington.  
 Katharine A. Chapman, Kensington, Md.  
 Addison Bertram Clifford, Arlington.  
 Hazen Eugene Cole, Washington, D. C.  
 William J. Cusack, Washington, D. C.

Robert Hoyt Flynn, Jr., Radford.  
 Alfred W. Glaess, Norfolk.  
 Henry Frank Glover, Friendsville, Md.  
 Herbert Hardy Howze, Norton.  
 Sidney Curtis James (Col.), Durham, N. C.  
 Delbert Vine Kechele, Richmond.  
 Manuel Phillip Landman, Forest Hills, L. I., N. Y.  
 Kasty Charles Latven, Arlington.  
 Albert E. Laughlin, Harman.  
 Edward Sharpe Lee (Col.), Portsmouth.  
 Henry H. Lichtenberg, Washington, D. C.  
 Edward A. R. Lord (Col.), Petersburg.  
 Lyle Millan Mason, Washington, D. C.  
 Agnes Louise McNutt, Washington, D. C.  
 Grover Lee Moore, Portsmouth.  
 Henry Simmons Murphy, Washington, D. C.  
 Stephen W. Nealon, Jr., Washington, D. C.  
 Frederick William Nueske, Staunton.  
 Joseph E. Pisano (Osteopath.), Lynchburg.  
 Ernest Harold Reynolds, Madison, N. C.  
 LeRoy Robins, Washington, D. C.  
 Samuel Rogers, Roanoke.  
 John Rudolph Saunders, Richmond.  
 Walter Eugene Sharpe, Jr., Roanoke.  
 Luther Sheldon, Jr., Navy Department, Washington, D. C.  
 Joseph Washington Stein, Washington, D. C.  
 Micollus Noel Stow, Arlington.  
 Hyman Strauss, Brooklyn, N. Y.  
 Ellis Frank Swarthout, Alexandria.  
 George Brooks West, Jr., Norfolk.  
 Dorothy V. Whipple, Washington, D. C.

### Doctors in Service.

The following promotions have recently been noted:

Dr. Thomas N. Spessard, Norfolk, to Captain, USNR.

Dr. J. R. Grinels, Richmond, to Lieutenant Colonel, AUS.

Dr. George R. Carpenter, Fairfax, to Major, AUS.

Dr. Joseph B. Jones, Culpeper, to Major, AUS.

Captain Julius Charles Hulcher, MC., son of Dr. and Mrs. J. J. Hulcher, Richmond, has been presented with the Bronze Star Medal for meritorious service as a battalion medical officer of the 83rd Chemical Mortar Battalion in Italy, France and Germany. He is a graduate of the Medical College of Virginia, class of 1941.

Captain Joshua P. Sutherland, MC., has been awarded the Bronze Star Medal and has also received a commendation from General Patch for his medical work in Staumlager IX B. He has recently returned to this country, having been a prisoner of war in Germany, and is now located at Ft. Jackson, S. C.

**Medical Society of District of Columbia.**

On July 1, Dr. William Earl Clark succeeded to the presidency of this Society. Officers elected at the annual meeting to serve with him are: President-elect, Dr. William P. Herbst, Jr., and vice-presidents, Dr. Fred A. J. Geier and Dorothy S. Jaeger. Dr. William M. Ballinger had acted as president since Dr. James N. Greear, Jr., (Lt. Col., M.C.) was ordered overseas several months ago.

**Dr. J. Marion Bryant,**

Until recently assistant resident in internal medicine at the University of Virginia, is now instructor in internal medicine at the University of Michigan Hospital, Ann Arbor.

**Dr. P. L. Hill**

Has been appointed to fill a vacancy on the Council of Colonial Heights, suburb of Petersburg. Dr. Hill has made his home in Colonial Heights about twenty years and has been active in civic and social affairs.

**Dr. E. G. Gill,**

Roanoke, was recently appointed chairman of the Board of Health of that City. Dr. W. R. Whitman was appointed vice-chairman.

**The American Board of Ophthalmology**

Announces that due to transportation difficulties the examinations of the Board, originally scheduled for October 1945 in Chicago, have been postponed to January 18 to 22, 1946.

**University of Virginia, Department of Medicine.**

The sum of \$10,000 has been provided in the will of the late Mrs. Sallie B. Twyman as a memorial to her late husband for the establishment in the Medical School of the Frederick W. Twyman Fund, the income to be applied for research in cardiovascular disease under the direction of the Department of Internal Medicine.

**Dr. R. D. Garcin, Sr.,**

Has been named chairman of the Richmond Public Library Board, succeeding the late Dr. Beverley R. Tucker.

**Dr. W. A. Carr,**

Formerly of Harman, is now located in War, West Virginia.

**The Gill Memorial Eye, Ear and Throat Hospital,**

Roanoke, announces that the Nineteenth Annual Spring Graduate Course will be held at the Hospital on April 1-6, 1946.

**Married.**

Lt. Fordyce Cox Stone, USNR., Binghampton, N. Y., and Dr. Catherine Bird Hoover, Richmond, August 6. She is a graduate of the Medical College of Virginia, class of 1945.

Major Thomas Whitehead Murrell, Jr., MC., AUS., Richmond, and Miss Jane Nelson Goolrick, Fredericksburg, August 2. Major Murrell graduated in Medicine from the University of Virginia in 1940.

**Dr. Mervin H. Mitchell**

Has resigned his position with the Norfolk and Western Railway Company in Roanoke and is now engaged in general practice in Albany, Ohio.

**The Seaboard Medical Association**

Will hold its Golden Anniversary Meeting at the Cavalier Hotel, Virginia Beach, December 4-6, under the presidency of Dr. A. A. Burke, Norfolk. Dr. C. P. Jones, Newport News, is secretary-treasurer of the Association.

**\$34,000 in War Bonds as Prizes**

For the best art works by physicians, memorializing the medical profession's "Courage and Devotion Beyond the Call of Duty" (in war and in peace).

This prize contest is open to any physician member of the American Physicians Art Association, including medical officers in the armed forces of the United States and Canada.

Full information available on request of the sponsor, Dr. Francis H. Redewill, Flood Bldg., San Francisco, Cal., or Mead Johnson & Co., Evansville, Ind.

**Established Hospital for Lease.**

A Sanatorium for nervous, mental, alcoholic and drug cases doing an excellent business to a reputable physician or medical group. Dr. E. W. Stokes, 923 Cherokee Road, Louisville 4, Kentucky. (*Adv.*)

**Physician Wanted.**

Physician for industrial dispensary in South. Must be graduate Class A School. Please write details and give references in first letter. Expenses of

interview will be arranged for satisfactory applicants. Write to Medical Director, Box 590, Knoxville 5, Tennessee. (*Adv.*)

### New Books.

Recent additions to the Library of the Medical College of Virginia include the following, which are available to our readers under usual library rules:

Bailey and Bishop—Notable names in medicine & surgery.  
Bargen—The modern management of colitis.  
Barton—Symptom diagnosis, regional and general.  
Baruch—Parents can be people.

Boyd—An introduction to medical science.

Brous—Bibliography lead poisoning.

Bucy—The precentral motor cortex.

Cabot & Adams—Physical diagnosis. 13th ed. 1942.

Campbell—Dissection outline and index for students.

Cattell, ed.—Ageing and degenerative diseases.

Clayton—The theory of emulsions and emulsification.

Cohen—Coming home.

Cole—History of comparative anatomy from Aristotle to the 18th century.

Corner—Diseases of the male generative organs.

De Kruif—The male hormone.

Deming—General chemistry.

Dodds & Dickens—The chemical and physiological properties of the internal secretions.

Dubos—The bacterial cell.

Field—Freedom is more than a word.

Foulk—Introductory notes on quantitative chemical analysis.

French—An index of differential diagnosis of main symptoms. 6th ed. 1945.

Fuller—The qualitative analysis of medicinal preparations.

Griffith—Recent remedies.

Grinker—Men under stress.

The Harvey Lectures. 1916-1917.

Hill—A brief laboratory guide for qualitative analysis.

Humbert—Virginia, economic and civic.

Jeans—The universe around us.

Kester—Accounting theory and practice.

Klarmann—The crux of pastoral medicine.

Lennon—Victoria through the looking glass.

Leonardo—History of gynecology.

Levinson—Pediatric nursing.

Lucas—The book of prescriptions.

Lusk—The science and art of midwifery.

McCorkle—Survey of physical science.

Mitchell—The Red City (novel).

Modern medicine annual—1944.

Moseley—Shoulder lesions.

Murray—Standards and tests for reagent chemicals.

The 1943 yearbook of general medicine.

Nizer—What to do with Germany.

Ostwald—Outline of general chemistry.

Owen—The surgical diseases of children.

Pinner—Pulmonary tuberculosis in the adult.

## Obituaries

### Dr. Emmett Wood Meade,

Castlewood, died July 28. He was eighty-three years of age and graduated from the Medical College of Virginia in 1892. Dr. Meade has practiced in Russell County for more than forty-five years. He had been a member of the Medical Society of Virginia since 1904.

### Dr. Robert John Styers,

Prominent physician of Amelia, died July 24. He was a native of North Carolina and sixty years of age. Dr. Styers graduated from the former University College of Medicine, Richmond, in 1911. He had practiced in Amelia County for more than thirty years and served as a Captain in the Medical Corps during World War I. Dr. Styers had been a member of the Medical Society of Virginia for twenty-nine years. Two sisters and a brother survive him.

### Resolutions on Dr. Robert E. Whitehead.

WHEREAS, in His loving wisdom, it has pleased Almighty God to remove from our midst Doctor Robert E. Whitehead of Princess Anne County, the senior member of our Medical Society and for forty-eight years, even up until the time of his death, an outstanding physician of our community.

BE IT RESOLVED: First: This community has lost a most valuable and greatly beloved citizen as well as a splendid friend, and an able and skillful doctor, who upon entering a sick room inspired not only the patient but also the family with hope and confidence.

Second: The medical profession has lost one of its most highly esteemed members and deeply regrets the passing of such a willing and able consultant whose genial spirit gave never ending joy to all who came in contact with him.

Third: Be it further resolved that a copy of these resolutions be sent to Doctor Whitehead's family, to the VIRGINIA MEDICAL MONTHLY and spread on the minutes of the Princess Anne Medical Society.

I. L. HANCOCK

R. W. WOODHOUSE, JR.

### Dr. Fauntleroy Flinn,

Prominent radiologist of Decatur, Illinois, died July 26. He was a graduate of the Medical College of Virginia, class of 1914. Dr. Flinn is survived by his wife and daughter and also five brothers, all of Alberta, Virginia.





## NUTRITION AND THE TIME FACTOR *in Convalescence*

Febrile and certain metabolic diseases impose a serious drain on the nutritional reserves of the organism. The need for virtually all nutrients is increased considerably, far beyond the point where dietary adjustment can be expected to compensate. Hence, as convalescence begins, the incurred nutritional deficit must be made good before complete recovery can ensue. The more quickly nutritional deficiencies are corrected, the more quickly will convalescence progress to complete return of normal strength and vigor.

The use of Ovaltine, made with milk as di-

rected, helps to raise the convalescent's intake of essential nutrients to desired levels. This delicious food drink provides biologically adequate protein, readily assimilated carbohydrate, highly emulsified fat, B complex and other vitamins, and essential minerals. Its low curd tension makes for quicker gastric emptying, hence it does not cloy the appetite. Ovaltine breaks the monotony of many diets and its attractive, appealing taste assures its acceptance by the patient. Hence Ovaltine may be given in the recommended three glassfuls daily for maximum benefit.

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CARBOHYDRATE . . . . .	62.43 Gm.	VITAMIN D . . . . .	480 I.U.
FAT . . . . .	29.34 Gm.	THIAMINE . . . . .	1.296 mg.
CALCIUM . . . . .	1.104 Gm.	RIBOFLAVIN . . . . .	1.278 mg.
PHOSPHORUS . . . . .	.903 Gm.	NIACIN . . . . .	7.0 mg.
IRON . . . . .	11.94 mg.	COPPER . . . . .	.5 mg.

\*Based on average reported values for milk.



**W**HEN interviewed between platefuls, this 11-months-old young man emphatically stated: "I have been brought up on Pablum and still like it, but some days when I'm in the mood for oatmeal, nothing satisfies me like Pabena!"

*Nutritious, quick and easy to prepare,  
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**MEAD JOHNSON & COMPANY, EVANSVILLE, IND., U.S.A.**

# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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## THE INFLUENCE OF THE SISTER KENNY PUBLICITY ON THE TREATMENT OF POLIOMYELITIS\*

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Having been a member of a committee for the investigation and evaluation of the much publicized Sister Kenny conception and treatment of infantile paralysis, and having traveled some twenty thousand-odd miles to see about 750 cases, most of which were under her method of treatment, I feel that it is an unusual privilege to give you my personal impression of the visits to the various centers where epidemics, or near epidemics, occurred. They included the "Mecca", Minneapolis, Winnipeg, Chicago, St. Louis, Dallas and Little Rock. Some of the towns were visited several times.

Sister Kenny has stormed the United States. The arrogant lady and super-saleswoman has claimed in many news-press articles and radio programs to "cure" cases of infantile paralysis, even when they were so severe as to ordinarily require the respirator. She, herself, does not approve of the respirator—and maybe she's right about that—for few respirator cases ever recover sufficiently to be of much use to themselves or their community. However, the exception in one or two cases may counteract a lot of others.

A brief analysis of the Kenny principle is as follows: First, she does not consider poliomyelitis as a paralytic disease involving the anterior horn cells in the spinal cord, but rather as a generalized or systemic disease in which the general nervous system is involved. With it comes the fever, opisthotonos, headache, and other symptoms of an acute infection. In some cases this may be mild, but in some, such as the bulbar type, the initial symptoms may be very severe.

Sister Kenny, in her original conception, did not admit that there was paralysis. She explained the so-called paralysis in two terms: first, muscle spasm in certain muscles and, second, incoordination or disorientation in the affected muscles as a result of muscle spasm or painful contractures of the opposing group. The pathology in the anterior horn cells means nothing to her.

Sister Kenny has changed her theories and methods of treatment frequently in her publications. She has produced three books. All are at variance with each other. In her earliest book she never mentioned "muscle spasm" or even hot packs—nor does she mention alienation or disorientation. She explains this by the assertion that the Australian medical society did not accept or approve her views. Again, I wish to reiterate that Sister Kenny in her conception of anterior poliomyelitis does not admit paralysis. Hence, according to her theory, any crippling effects are not due to paralysis, but only to the lack of the patient's knowledge to use the muscles because of the muscle spasm and reflex inhibitions. She claims that the muscle spasm and disorientation may be overcome by the systematic use of hot packs, and by the hypnotic training of individual cases to use the paralyzed muscles in spite of their inhibitions. The hot pack, which must be 100 per cent pure wool, is boiled and steamed and then wrung dry so as to eliminate moisture and the burning or scalding effects on the skin. They must accordingly be applied every two hours beginning at 8:00 A. M. and lasting until 8:00 P. M. Her technique requires that they be applied regardless of the temperature elevation or any other contradictory status of the patient. The impression she gives is that the

\*Read before the Richmond Academy of Medicine, November, 1944.

more serious the condition of the patient, the more dramatic the results from the hot packs, bulbar cases especially. All failures are blamed on the fact that the cases did not come under treatment early enough. Had she gotten them in time they would be normal after her treatment. Most of the failures are outspokenly blamed on the attending physician in spite of his good intentions and, as a rule, intelligent advice.

There is nothing new in the Kenny treatment or even in her conception of the disease. I still feel that Dr. Key's quotation of the Australian critic is correct: "What's good in the Kenny treatment is not new and what's new is not good." Her outline of the treatment is not a system of treatment but a ritual. Her salesmanship has convinced many physiotherapists—and even physicians—that there is only one way—the straight and narrow path of the ritual. It will improve or "cure" cases of poliomyelitis. You might say that this conception can lead only to one conclusive statement—the disciples are seeing only as far as the end of their noses—and Sister Kenny's personality.

Sister Kenny has promulgated her theories in this country for only two or three years. All of us who have come in contact with polio cases for many years realize that the severe deformities, such as scoliosis, develop and increase only after four or five or six or ten years. You can scarcely find a physiotherapist who has taken the eight to fourteen weeks course under Sister Kenny, who is not completely sold on the fact that her technique and teachings are fact and law. No other conception is possible! Many times when phases of the Kenny methods or technique happened to be brought up and discussed, I have seen them get up and walk away rather than face the adverse criticism. It's almost like a religion with them. Again Sister Kenny's salesmanship!

From the trend of this discussion you will no doubt have already arrived at the conclusion that I am very antagonistic to Sister Kenny and all her doctrines. Strangely enough, I am not! Personally, I like Sister Kenny. She's a great person with a lot of spunk, but, if you'll let her, she'll pull the wool over your eyes as fast as you can say "Jack Robinson"! Her dynamic personality has gotten her more opportunity to further her ideas and spread her theories than any scientific man has ever enjoyed. Compare her yourself with any you can think of.

Dr. Locke enjoyed publicity—so did Bone-Setter Reese. Sister Kenny's publicity hit a soft spot in the reactions of the National Foundation for Infantile Paralysis. They really didn't want to support her, in my opinion, but since they derived their resources from your dollar and mine they felt that public opinion demanded that this "outstanding contribution to the treatment of poliomyelitis" be not only recognized but supported. Otherwise, there might not be as many of your and my dollars forthcoming next year. They naturally wish to carry on a most wonderful work with such outstanding possibilities as the prevention and treatment of poliomyelitis in the future.

Sister Kenny's contribution to poliomyelitis has been great, not in her theories or ideas of the disease, not in her conception of its treatment, but in the upheaval it has caused in medical circles. Her efforts will, no doubt, lead to the standardization of the most desirable treatment of the acute and convalescent phases of the disease.

There have been too many schools of thought along this line. There were some, a minority, who believed in complete immobilization of the affected limbs, or spine, in plaster casts for weeks or months. This might have been proper for the completely paralyzed muscles, but is recognized as not being so good for the joints and the unparalyzed muscles. Some used splints to protect weakened muscles. They were removed from time to time daily for exercises and heat and massage. In spite of the fact that Sister Kenny harps on the idea that the disease is accompanied by excruciating muscle pain, this has never in the experience of most of us been an outstanding symptom. Pain is frequently present but is present only when movement is a factor. Pain has always been relieved by immobilization either by cast or splint, if properly applied. In the recent epidemic in Virginia, we have had the opportunity to compare cases, either untreated or treated by the use of casts and splints, with those who have had packs applied to painful muscles and daily motion to their joints, to a degree which was not painful, and we feel definitely that those receiving active treatment made more recovery in a shorter period of time than those which did not.

Not believing in the orthodox Sister Kenny ritual, we have used packs only as one would use them on a sore muscle or abscess—three to four a day for a half to three-quarters of an hour each. The cases



have received about twenty to thirty minutes of exercise daily, which consisted in active and assistive motions of those joints in which the muscles were not completely paralyzed and passive motion combined with muscle re-education in the nearly or completely paralyzed muscles.

We feel that *too much* treatment in the acute stages of poliomyelitis is more detrimental than *too little*.

The supervision of the treatment is a medical problem and not one to be relegated to the Sister Kenny enthusiasts or any other non-medical group who would tend to put an inflexible technique into action without consideration of the condition of the patient.

What, then, is the best course to follow from a standpoint of treatment if you are confronted with a case of acute anterior poliomyelitis?

1. Complete rest on a firm bed until the acute stage of the disease is over and the extent of the paralysis can be determined. It should be noted that in some instances the extent of the paralysis may not be established for a period of ten days to two weeks. Ordinarily, it is within four or five days. The primary paralysis may be due to three things—*Destruction* of anterior horn cells, *damage* to anterior horn cells, or *oedema* causing temporary paralysis of the anterior horn cells. The first group never recover; the second may or may not recover. The third group always recover.

As soon as the severity of the paralysis can be determined and the patient has passed the febrile stage, hot packs can be started. They need be applied only to the parts affected, particularly where pain is present at rest or upon motion or stretching. If the pain is severe it may be relieved in a large per cent of the cases by the subcutaneous injection of prostigmine. In many cases it is relieved by the hot packs, in a few it is increased by the hot packs but relieved by splinting.

It is not at all improper to incorporate the affected limb in a plaster of Paris cast but it would be improper to allow the cast to remain intact for longer than a week or two. It should then be split so that the limb could be removed at regular intervals for local treatment.

2. Local treatment in the early stages of the disease should consist in motion of the joints through a range which is not painful. This motion should be carried out by a physiotherapist thoroughly fa-

miliar with anatomy. It should be done a few times only and not more than once or twice a day. Massage is not in order at this stage but heat is. Heat may be applied either through the hot packs which are the most effective, or through the infra red lamp. When the acute disease is entirely past, the heat may be in the form of a hot tub bath once a day. This will allow in addition, a certain amount of active motion. A large tub will permit freedom of motion of the limbs and at the same time the buoyancy of the water will overcome gravity and even weak muscles may be put into activity without overstraining them. Complete rest should be continued through this stage. If there is tendency to drop foot, or if there is any discrepancy in the strength of the flexors and extensors of the limbs, some form of splinting should be carried out during the resting hours. The use of the Kenny "foot board" is very satisfactory since there is a four inch space between the lower end of the mattress and the "foot board". This allows room for the heel when the patient is on his back and room for the foot when the patient is on his face. In either position the foot is supported by the "foot board" at a position of 90 degrees. The patient should be turned from back to face at regular intervals.

The packs, as recommended by Sister Kenny, are applied so as to allow patients to use as many of their joints as possible while they are in place. Only the shoulder and hip joints are exceptions. This is because the deltoid muscle in the shoulder and the gluteal muscles in the hip region cannot receive benefit from the moist heat treatment otherwise.

3. As recovery in groups two and three, above mentioned, takes place, the residual paralysis can be better determined. The problem then arises as to how much activity can be allowed. When can the patient be allowed certain amounts of freedom? When can they be allowed to move freely in bed? When can they sit up? When can they stand? When can they attempt to walk? These are the difficult questions to decide and they must be decided only after the most painstaking analysis of the extent of the paralysis in the various groups of muscles. Particular attention should be paid to the abdominal and spinal muscles. Even a minor amount of weakness in either of these groups may lead to the development of a curvature of the spine which may result in a most hideous and disabling

deformity as years pass by. Such deformities are difficult to prevent and tax the ingenuity of the orthopedic surgeon to the utmost to even control. Since such deformities do not usually develop for three to six years after the attack, any claims which Sister Kenny has for their prevention by her methods of treatment are still unfounded and unproven. Prolonged recumbency, then protection in braces combined with developmental exercises and finally correction in plaster jackets and fusion of the spine are the *only* measures to be resorted to.

4. Sister Kenny does not believe in braces. \* She is convinced that discrepancies in the relative strength of muscles can exist, when muscle spasm is eliminated, without the development of deformities. This conception may be true for a short time, especially when the patient is under active supervision and physiotherapy treatment, but ultimately deformities must and do occur under these circumstances. Even braces may not prevent them, but they help.

Braces should never be used unless supplemented by exercises to the weaker group of muscles. Obviously a weak muscle will not increase its strength if no demands are made of it. On many occasions I have seen tendencies to deformity remain at a stand-still or even improve under the combined use of the support of braces and developmental exercises.

5. General statistics show that only about 10 per cent of the cases diagnosed as infantile paralysis have any residual paralysis. Some show no paralysis even in the acute stage. They are called the non-paralytic cases. Sister Kenny includes all these in

her "cures". Most of the results of orthopedic treatment are based on the paralyzed cases only. Hence, there is great discrepancy in the comparison of the end results.

When the third stage of the disease is reached and there remain uncontrollable joints, some with fixed deformities, some without, there are many standard and time-proven operations to take care of the situation. These operations are designed to take care of the weakness of the paralysis as well as the deformities. They are designed to eliminate the necessity of braces.

#### SUMMARY

The effect of the Sister Kenny publicity in regard to her "new and revolutionary conception and treatment of infantile paralysis" has been a great stimulation to the medical profession. It has forced a greater interest in the analysis of the methods and results of treatment.

Above all, it has brought out the importance of good physical therapy, especially as related to the thorough knowledge of the action and function of individual muscles and the application of heat and carefully graduated exercises to restore the amount of function they are capable of.

To carry out the technique of the Kenny method is an extremely expensive proposition. Few individuals can afford it. The treatment in most instances must be subsidized by Federal, State or charitable assistance.

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#### 50th Anniversary of Discovery of X-Ray.

The fiftieth anniversary of the discovery of x-ray will be celebrated on a national basis during the week of November 5 to 10 under the sponsorship of the American College of Radiology.

The x-rays, so-called because science did not know their exact nature, were discovered by the German physicist, Wilhelm Conrad Roentgen, on November

8, 1895, at the Physical Institute of the University of Wurzburg in Bavaria.

The "golden jubilee" celebration of the discovery of x-ray will emphasize the health attributes of x-ray in medicine, seeking, particularly, to acquaint parents with the most important role of radiology in the early detection of disease in youngsters.

# BRAIN TUMOR IN STATE HOSPITAL PATIENTS A STUDY OF EIGHT CASES IN ONE HUNDRED AND TWENTY CONSECUTIVE AUTOPSIES\*

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## FREQUENCY OF MENTAL SYMPTOMS IN BRAIN TUMOR:

In 1889 Oppenheim introduced the term "Witzelusucht", obsessive joking, to describe the jocularity and facetiousness which had been noted in neoplastic disease of the *frontal* lobes. The appropriateness of the term is evidenced by the fact that it is

Gibbs<sup>8</sup> studied a series of 1,545 cases of brain tumor and found mental changes in 295. Moersch<sup>15</sup> stated as his opinion that psychic manifestations occur in 100 per cent of brain tumor cases. Unsworth<sup>19</sup> believed that "cerebral neoplasms are always associated with either minor or major psychic alterations". Kanzer<sup>11</sup> found symptoms of psychic

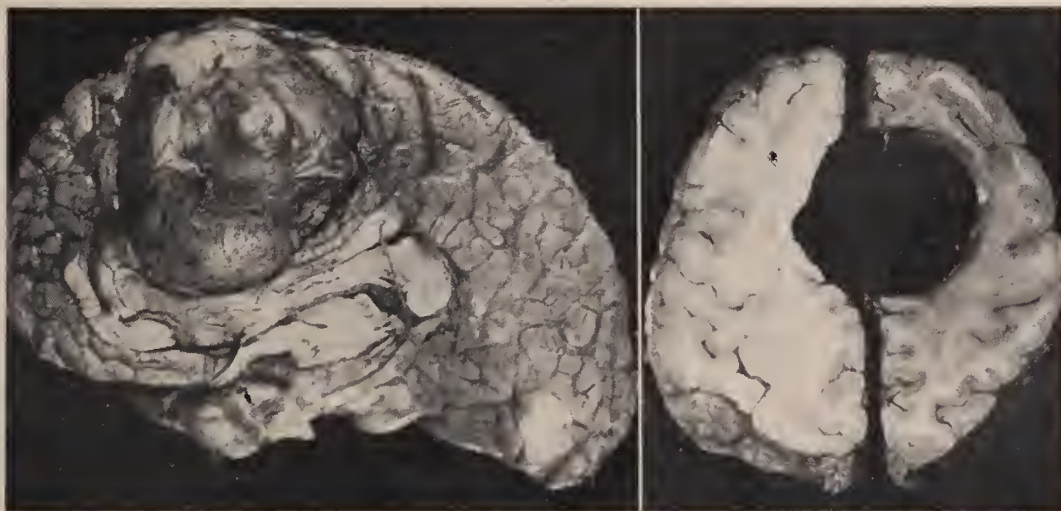


Fig. 1a.—Parasagittal meningioma in a 59-year old woman. Weight of tumor (after fixation): 125 grs. Expansive mode of growth.

b.—The same after removal of the tumor. Picture shows the impression produced by the tumor on the left hemisphere, as well as on the right.

still alive in practically every standard reference on the subject.

Following Oppenheim's description of the mental changes associated with frontal lobe tumor, there appeared to be a tendency to think of mental changes *only* in relation to tumors located in the frontal lobes. More recently the tendency seems to be to associate mental changes with tumor *anywhere* in the brain.

\*Read at meeting of Neuropsychiatric Society of Virginia, Williamsburg, Va., November 9, 1944.

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aberrations with few exceptions in a series of 205 cases of variously located intracerebral tumors. Jameison and Henry<sup>10</sup> stated from their review of the literature that estimates of mental disorders with brain tumors varying from 40 to 100 per cent.

State hospital patients are committed because of mental symptoms and obviously are not helpful in determining the frequency of psychic abnormalities in brain tumor cases. However, from our study of the literature, it appears that the question of the incidence of psychic alterations in brain tumor cases hinges on the definition of the term as applied by various authors. Some authors include mild psy-



choneurotic-like symptoms, while others regard only the more gross aberrations in calculating the mental symptoms in tumor cases. The wide variation of estimates can be explained on that basis.

#### NATURE OF MENTAL REACTIONS:

*The mental symptomatology of brain tumors is*

lists are cerebral syphilis, senile psychoses, and cerebral arteriosclerosis.

Symptoms resembling the functional psychoses or neuroses are not rare. Cohen<sup>5</sup> (1943) reported the case of a 38-year old veteran whose first symptoms

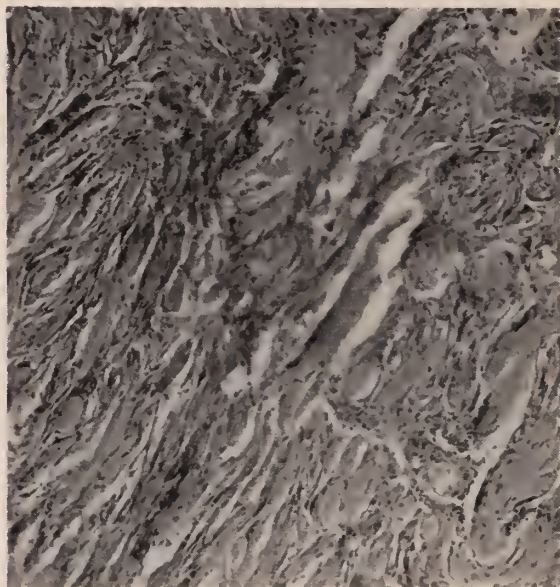


Fig. 2.—Microscopic appearance of the same tumor. H. & E. stain x 190. Fibrous meningioma.

*quite varied and apparently can resemble any psychosis or psychoneurosis.* Generally speaking, the symptoms tend to resemble the various organic psychoses, and lists of mistaken clinical diagnoses compiled by various authors include most of the organic reaction group. Of most frequent occurrence in such

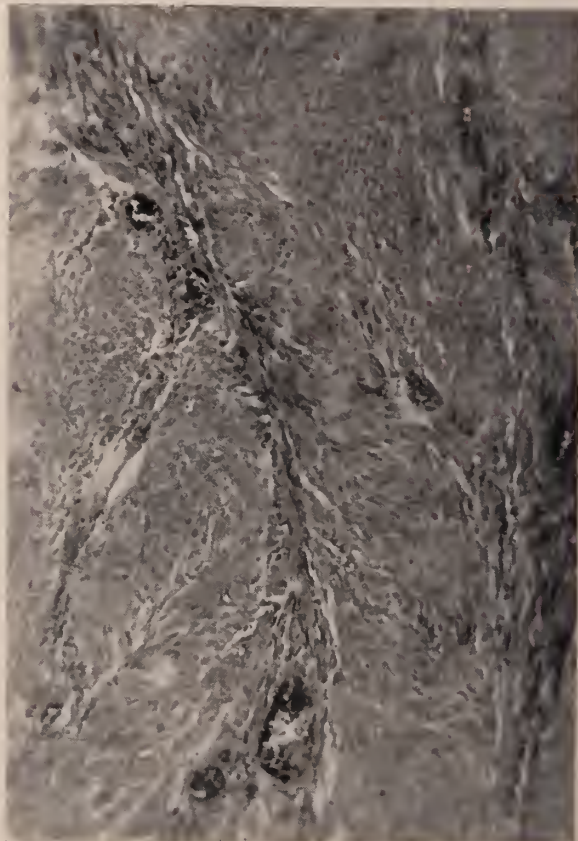


Fig. 4.—Microscopic appearance of the same tumor. H. & E. stain x 190. Meningo-endothelioma.

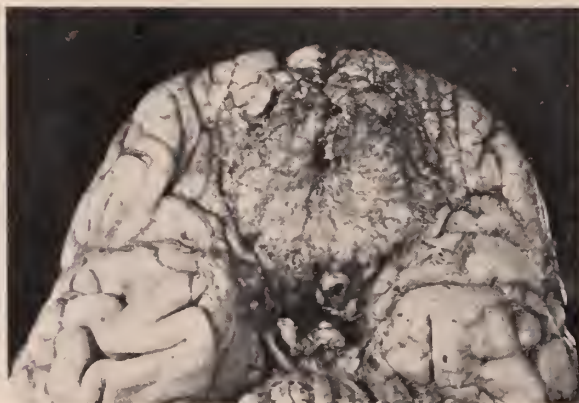
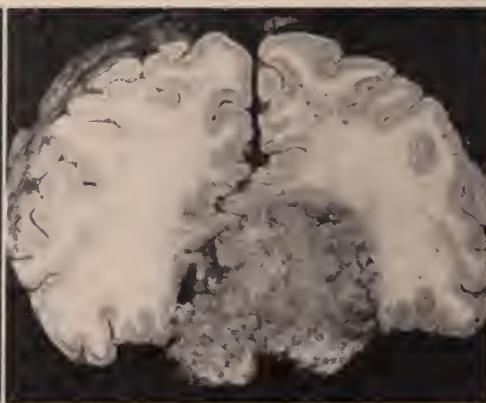


Fig. 3a.—Meningioma of the olfactory groove in a 69-year old man. Expansive mode of growth. Bilateral involvement of the frontal lobe.



b.—The same on coronal section. Shows again the impression this type of growth exerts on the surrounding tissues. Left frontal lobe more involved than the right one

were psychoneurotic in character, consisting of ill-defined somatic complaints. Forty months elapsed and five admissions to a mental hospital occurred before the diagnosis of organic brain disease was made. Autopsy revealed a tumor involving the lower parietal and upper temporal gyri of the left hemisphere. Pessin<sup>17</sup> (1942) reported the case of a 53-year old woman admitted to a mental hospital with the chief symptoms of anxiety, fearfulness, agitation, insomnia, and suspiciousness, the typical

poorly organized. He correlated different types of hallucinations with tumors of various regions of the brain. He believed delusions are rare and tend to be paranoid in nature.

In 1903 Dupré postulated the secretion of a toxin by the tumor and deemed this the responsible agent for the mental changes. Anderson<sup>1</sup> has emphasized the resemblance of brain tumor cases to the toxic psychoses.

Wilson<sup>20</sup> stated that cortical growths do not have



Fig. 5.—Recurrent glioblastoma multiforme of the right temporal lobe in a 41-year old man. Weight of the tumor (after fixation): 90 grs. Expansive mode of growth. Severe distortion of the left hemisphere.

picture of an involutional reaction. Apparently the case was well studied and no indication of brain disease found. When sedation and hydrotherapy failed to control her agitation, she was given shock therapy and improved after the first treatment. Five weeks after admission and after several shocks had been administered neurologic signs appeared, and the correct diagnosis of brain tumor was made.

Hallucinations are not common in cases of brain tumor. Unsworth<sup>19</sup> stated that they are crude and

a marked tendency to derange the psyche. He attributed intellectual disturbances to interference with large association fibre-systems, i.e., corpus callosum, occipito-temporal and occipito-frontal pathways. He believed tumors within or near the ventricular system are likely to induce some type of emotional impairment.

We have been impressed that the mental symptoms are closely correlated with the age and pre-morbid personality and that these factors influence the char-



acter of the psychic reactions as much or more as the location and character of the neoplasm. As Zfass and Riese<sup>21</sup> have pointed out, each age group tends

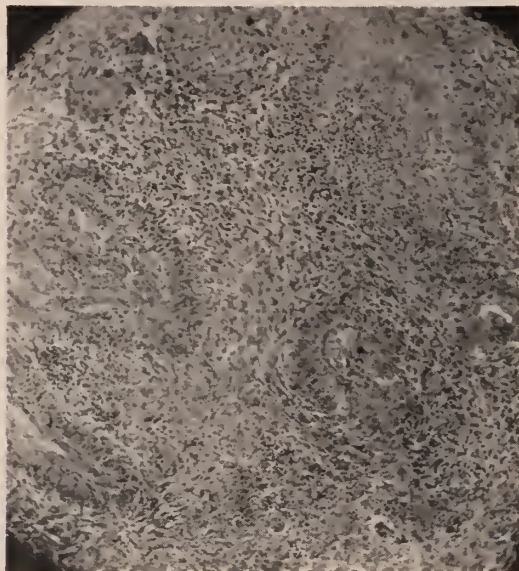


Fig. 6.—Histologic appearance of the same tumor. H. & E. stain x 155. Perivascular growth.

to react to organic change of the brain with symptoms more or less characteristic of the group, regardless of the pathogenesis.

#### FREQUENCY OF BRAIN TUMOR IN MENTAL PATIENTS:

It is desirable when discussing the incidence of brain tumor in mentally ill patients to distinguish

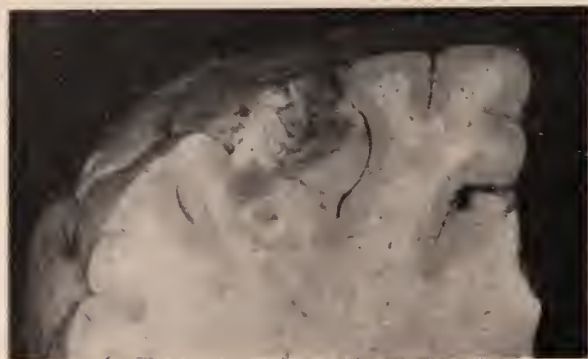


Fig. 7.—Glioblastoma multiforme in a 60-year old man involving area 8 of Brodmann (posterior part of the right second frontal convolution). Apparently well-defined growth.

clearly between (1) *mental changes due to brain tumor* and (2) *tumor developing in patients who are already suffering from a major psychosis*. The

first group includes all patients committed because of mental symptoms associated with brain tumor. The second group excludes these patients and considers only those patients who were committed because of other types of psychoses and later developed a brain tumor. Lack of clarity on this point probably accounts for a great deal of the disparity of the published statistics.

In 1903 Blackburn<sup>4</sup> reported an incidence of 1.7 per cent brain tumors in 1,642 autopsies on mental patients. Davidoff and Ferraro<sup>7</sup> studied 90 brain tumors in 1,450 brains collected by the New

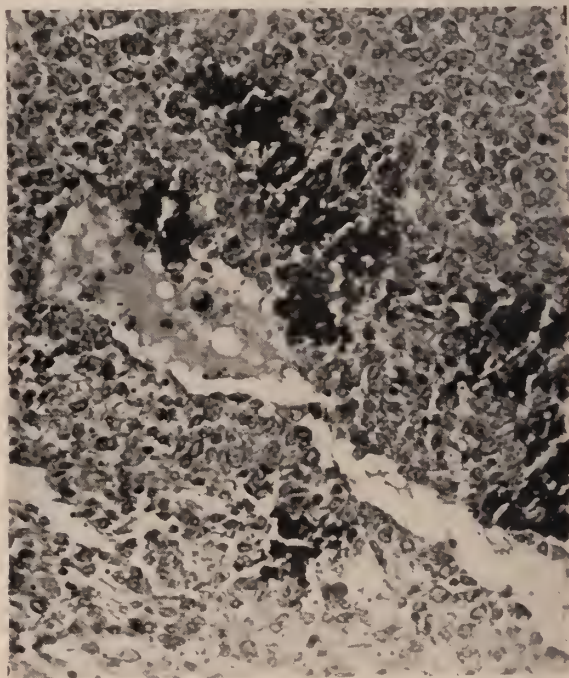


Fig. 8.—Histologic appearance of the same tumor. Extensive calcification. H. & E. stain x 340.

York State Psychiatric Institute in 26 years. After allowing for the fact that the brains were collected because of special interest, they concluded that the incidence of brain tumor in state hospital patients is not greater than .1+ per cent. Hoffman<sup>9</sup> reported an incidence of 3.5 per cent. Larson's<sup>13</sup> incidence of 13.5 per cent in 229 autopsies is conceded to be unusually high. Zfass and Riese<sup>21</sup> reported 4.9 per cent in 200 autopsies. Anderson<sup>1</sup> concluded that the incidence of brain tumor in mentally ill patients does not exceed that in non-psychotic patients. If those patients who are admitted to mental hospitals because of symptoms referable to brain



tumor are excluded, this statement is probably correct. We find no evidence to indicate that brain tumor develops more frequently in patients suffer-

to August 31, 1944, there were 234 deaths at the Eastern State Hospital. Permission for autopsy was requested of the relatives in every case. Permission



Fig. 9.—Metastatic tumor in a 60-year old man involving areas 44 and 45 of Brodmann (posterior part of the left third frontal convolution). Apparently well defined growth.

ing from a psychosis than in the normal population.

MATERIAL

During the 17-month period from April 6, 1943,

was secured and autopsies performed in 120 cases (51.2+ per cent). The autopsies were complete in 118 cases (50.4 per cent) and limited to the brain in 2 cases (.8+ per cent).

In Figure A is shown the age incidence of the autopsied cases. The geriatric nature of the material is demonstrated in graphic form. The largest number of deaths (31.7 per cent) occurred in the eighth decade. Over two-thirds (70.1 per cent) of the cases were more than 60 years old.

In Table 1 are presented the clinical mental diagnoses. As would be expected from a study of the age incidence, the largest groups by far were the degenerative organic reaction types, i.e., senile psychoses and psychoses with cerebral arteriosclerosis. These account for 42.5 per cent of the clinical diagnoses. In most cases these diagnoses were verified at autopsy. It is pointed out again that these are

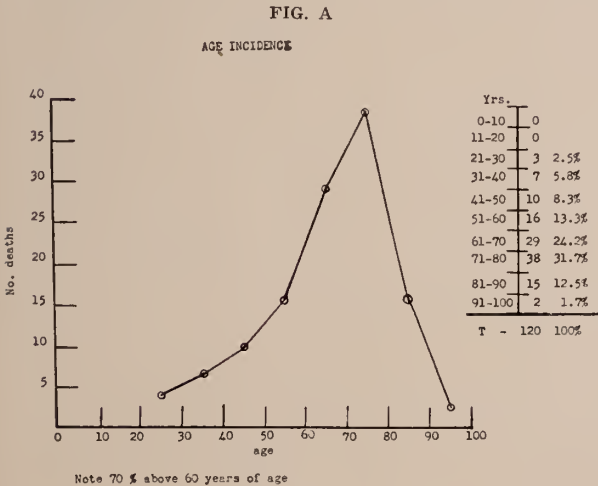


TABLE 1  
CLINICAL DIAGNOSES

DIAGNOSIS	M	F	T	%
Senile psychoses	13	15	28	23.3
Psychoses with cerebral arteriosclerosis	16	7	23	19.2
Dementia praecox (schizophrenia)	4	9	13	10.8
Manic-depressive psychoses	7	6	13	10.8
Psychoses with syphilitic meningo-encephalitis (general paresis)	8	1	9	7.5
Psychoses due to other somatic disease	3	5	8	6.7
Psychoses with intracranial neoplasm	4	0	4	3.3
Psychoses with mental deficiency	0	3	3	2.5
Without psychoses - mental deficiency	2	1	3	2.5
Psychoses with epidemic encephalitis	0	2	2	1.7
Psychoses with meningo-vascular type cerebral syphilis	2	0	2	1.7
Psychoses due to Alzheimer's disease	0	2	2	1.7
Involitional psychoses	0	2	2	1.7
Psychoses with cardio-renal disease	2	0	2	1.7
Undiagnosed psychoses	2	0	2	1.7
Psychosis due to epileptic deterioration	1	0	1	.8
Mental deterioration due to trauma	1	0	1	.8
Paranoid condition	0	1	1	.8
Psychosis with other (than intracranial) neoplasm	1	0	1	.8
Total	66	54	120	100

the types of reactions with which brain tumor is frequently confused in older age groups.

#### ANALYSIS OF TUMOR CASES

There were 8 intracranial tumors in the 120 autopsies, approximately 6.1 per cent. As shown previously, this is greater than the usual incidence except in Larson's series. It is probably greater than would be found in any large series of consecutive, unselected autopsies. Two of the tumors were small meningiomas which occurred in patients with pre-existing major psychoses. Their sizes and locations lead us to consider them clinically insignificant. This leaves a total of 6 cases (5 per cent) in which major psychic alterations and later death were produced by intracranial neoplasms.

It is interesting to compare the incidence of intracranial tumors (6.1 per cent) with spontaneous intracerebral hemorrhages which occurred in only 3 cases (2.5 per cent). The latter are commonly regarded as frequent in elderly people while intracerebral tumors are usually thought of as infrequent. Softenings, however, were quite numerous and lesions of various sizes were found in 28 cases.

In Table 2 we have summarized data relative to the tumor cases. Of the 8 cases, 5 were men and 3 women. They varied in age from 41 to 70 years. Only 2 cases were less than 60 years old. Seven of the 8 cases occurred in the 12-year period from 59 through 70 years. Seven of the cases were primary; one was metastatic.

In the six cases in which the tumors were of clinical significance (from now on this will be the only group considered) the duration of symptoms varied from 25 days to 3 years. The duration of hospitalization for symptoms referable to brain tumor varied from 8 days to 17 months.

The correct clinical diagnosis was made in 4 of the 6 cases. The clinical diagnoses at this hospital in the other 2 cases were senile psychosis and undiagnosed psychosis. In only one of the cases was the correct diagnosis made before the patient entered the hospital. One of our most interesting cases visited several physicians before admission and was considered a general parietic by each, and indeed the clinical symptoms did very closely resemble the usual picture of general paresis. We borrow from McIntyre<sup>14</sup> a phrase to explain these missed diagnoses, "lack of brain tumor consciousness". As in his cases the clinical signs in our 2 cases of un-

TABLE 2  
STATISTICAL SURVEY OF TUMOR CASES

Patient	age at death	sex	primary or metastatic	duration of symptoms	length of hospitalization	clinical diagnosis
A. B.*	69	F	P	28 yrs.	8½ yrs.	manic-depressive depressive type
B. R. B.	60	M	P	5 mos.	36 days	undiagnosed psychosis
A. F. C.*	63	F	P	8 yrs.	4 yrs.	psychosis with cerebral arteriosclerosis
E. W. C.	70	M	P	3 yrs.	17 mos.	psychosis with intracranial neoplasm
J. L. C.	61	M	P	4 wks.	8 days	psychosis with intracranial neoplasm
E. V. C.	59	F	P	20 mos.	13 mos.	senile psychosis simple deterioration
A. K. †	63	M	M	25 days	25 days	manic-depressive intracranial neoplasm
T. H. V.	41	M		5 mos.	24 hrs. at E.S.H. 1 mo. elsewhere	psychosis with intracranial neoplasm

\* Tumor clinically insignificant

† Metastatic intracranial neoplasm developed in a manic-depressive patient

suspected tumor were misinterpreted by several physicians, including general practitioners and psychiatrists. In retrospect we believe the correct diag-

nosis could have been made if any or all of the observers had possessed "brain tumor consciousness" and appropriate diagnostic procedures had been instituted.

#### CLINICAL PICTURE:

In Table 3 we present the mental symptoms exhibited by our tumor patients. The outstanding mental symptoms were jocularity, facetiousness, circumstantiality, inattentiveness, and inability to concentrate. Habit deterioration was well marked in 4 cases. Attention and concentration were almost uniformly poor. Conversation was irrelevant and incoherent in varying degrees in each case. Alterations in mood were in the direction of apathy and/or euphoria. Delusions and hallucinations were not detected. Sensorial and intellectual functions were markedly impaired in all cases except the patient with the metastatic growth in which these functions could not be well tested because of aphasia. Insight

TABLE 3  
MENTAL SYMPTOMS\*

Pt.	outstanding mental symptoms	Accompanying Mental Symptoms						
		habit deterioration.	inattention	incoherence irrelevance	alterations in mood	delusion and hallucinations	disorientation intellectual def.	insight and judgment
B.R.B.	loss of contact with environment	+++	++++	++	apathetic	— †	++++	—
E.M.C.	jocularity and circumstantiality	++++	++++	+++	euphoric	—	++++	—
J.L.C.	jocularity and circumstantiality	++	+++	+++	euphoric	—	+++	—
E.V.C.	jocularity and circumstantiality	+	++	++	euphoric	—	++++	—
A. K. †	aphasia	—	—	aphasia	none	—	?	?
W.M.M.	inattention and loss of ability to concentrate	+++	++++	++++	unknown	unknown	+++	unknown

\* 2 patients with small clinically insignificant meningiomas not included.

† minus sign indicates symptom absent

‡ symptoms are those referable to tumor and do not include those of the pre-existing psychosis.

TABLE 4

#### PRESSURE SYMPTOMS AND FOCAL SIGNS

Patient	headache			vomiting			papilloedema			convulsions.			altered P.R.&BP			stupor			Focal signs
	E*	L*	T*	E	L	T	E	L	T	E	L	T	E	L	T	E	L	T	
B.R.B.	—	—	—	—	—	—	+	+	—	—	—	—	—	—	—	+	+	—	Absent abdominal reflex. Conjugate deviation eyes to rt. Head turned to rt. Twitching rt. hand & forearm. Generalized muscular rigidity.
E.M.C.	—	—	—	—	—	—	+	+	—	+	—	—	—	—	—	—	—	+	Absent abdominal reflexes. Generalized muscular rigidity. Rt. rhythmical rest tremor. Masking of facies.
J.L.C.	—	?	—	—	—	+	—	—	—	—	—	—	—	—	+	—	—	+	Absent abdominal reflexes. Unsustained rt. patella and ankle clonus. Ataxia.
E.V.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	Diminution left abdominal reflex early. Left hemiparesis late.
A. K.	—	—	—	—	—	—	—	—	?	—	—	—	—	—	—	—	—	+	Absent right abdominal reflex. Motor aphasia. Right hemiparesis late.
W.M.M.	+	+	+	+	+	+	+	+	+	—	—	—	+	+	+	—	—	+	Absent abdominal and cremasteric reflexes. Left homon. Hemianopsia. Left facial paresis. Patella & hamstring reflexes left 4+ right 1+

\* E - early  
L - late  
T - terminal



and judgment were conspicuously lacking. We considered it difficult to distinguish between mental symptoms due to pressure and those due to a regional factor. We are inclined, however, to attribute changes in behavior to the latter.

In Table 4 the pressure symptoms and focal signs are presented. Only one of the cases, viz., the 41-year old man, presented any of the so-called typical pressure signs early. This was the only case where the correct diagnosis was made before the patient was admitted to this hospital. In this instance practically all of the pressure signs, with the

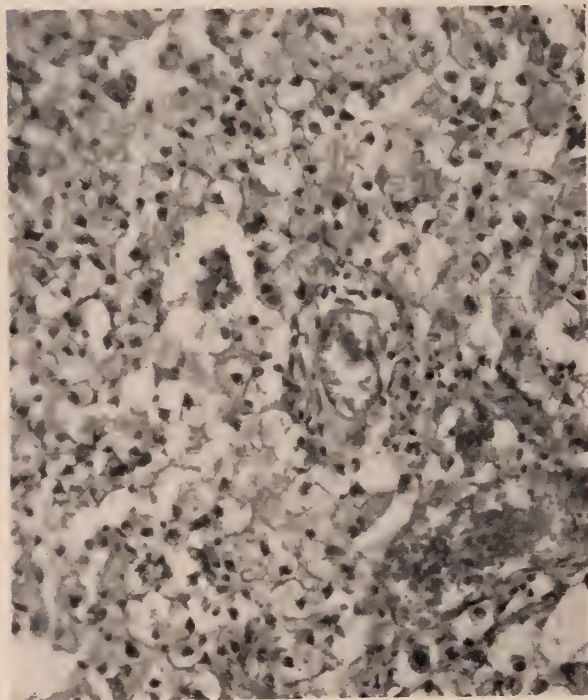


Fig. 10.—Histologic appearance of the tumor in fig. 9.  
H. & E. stain x 300.

exception of convulsions, occurred. In all of the other cases which fall in a much older age group, pressure signs were few and occurred only late or terminally.

Except in the case of the metastatic tumor situated squarely in Broca's area on the left with clear cut motor aphasia and the 41-year old patient with a typical brain tumor picture, the focal signs (table 4) were relatively few and rarely striking. Wilson<sup>20</sup> has emphasized the importance of alterations of the abdominal reflexes as one of the few early signs of frontal lobe tumor. In five of our cases the tumor was located in the frontal lobes. The

abdominal reflexes were altered in every case. We believe the importance of the abdominal reflexes has been more or less overlooked as an indication of frontal lobe disease. Special attention should be given to the proper technique of eliciting and evaluating these reflexes in organic reaction types of mental disease.

In one case the features of Parkinson's syndrome were striking and led to the clinical location of the tumor at the level of the basal ganglia. Autopsy revealed an olfactory groove meningioma.

It is unusual that the case with the parasagittal meningioma did not have choked disks with secondary optic atrophy. In their series of 13 cases of parasagittal meningioma of the anterior third, Cushing and Eisenhardt<sup>6</sup> state that "failure of vision is what usually brought the patient to the hospital". They stress the mental changes in these tumors and list the symptoms of mental deterioration, personality change, euphoria, untidiness and jocularity, which were common to their cases. These changes were prominent in our case.

The cerebrospinal fluid was studied in three cases. As to the others, the case diagnosed "senile dementia" was not punctured. In the case of the metastatic neoplasm the diagnosis was obvious without puncture. An x-ray of the chest had revealed a large tumor mass and the typical motor aphasia strongly suggested and localized an intracranial metastasis. Puncture was contra-indicated in the case of the 41-year old man as he had been studied elsewhere by ventriculograms, exploration and biopsy and as there were signs of marked increase in the intracranial tension. There is no common denominator in the fluids of the three patients who were punctured. One of the fluids was entirely normal.

#### OPERABILITY:

Because of the malignant nature and location of 2 of the tumors, it appears that operation could not have essentially altered their courses. One of the tumors was a metastatic growth. One case was operated and promptly recurred. Cushing,<sup>6</sup> pioneering in this field, removed 51 parasagittal meningiomas with a case mortality of 11 per cent and 28 olfactory groove meningiomas with a case mortality of 32 per cent between 1910 and 1932. With the great progress in neurosurgery, it would appear that the cases of parasagittal and olfactory groove men-

angiomas which we are presenting could probably have been successfully removed.

#### SOME PRINCIPLES OF TUMOR RESEARCH IN BRAIN PATHOLOGY

*Gross* study is as important as *histopathological* examination. We feel that too much emphasis has been laid on the *histogenic classification* as the exclusive task of tumor research in brain pathology. As a matter of fact, the major features of brain

and may thus be a criterion of important biological features of a given brain tumor. The *consistency* may be a criterion of the *age* of the lesion, rapidly growing and disintegrating neoplasms being soft and frequently granular in aspect, slowly growing, long lasting and encapsulating tumors being firm, especially when associated with sclerotic processes or calcification. The *age* of the lesion is not synonymous with the age of the clinical history, symp-

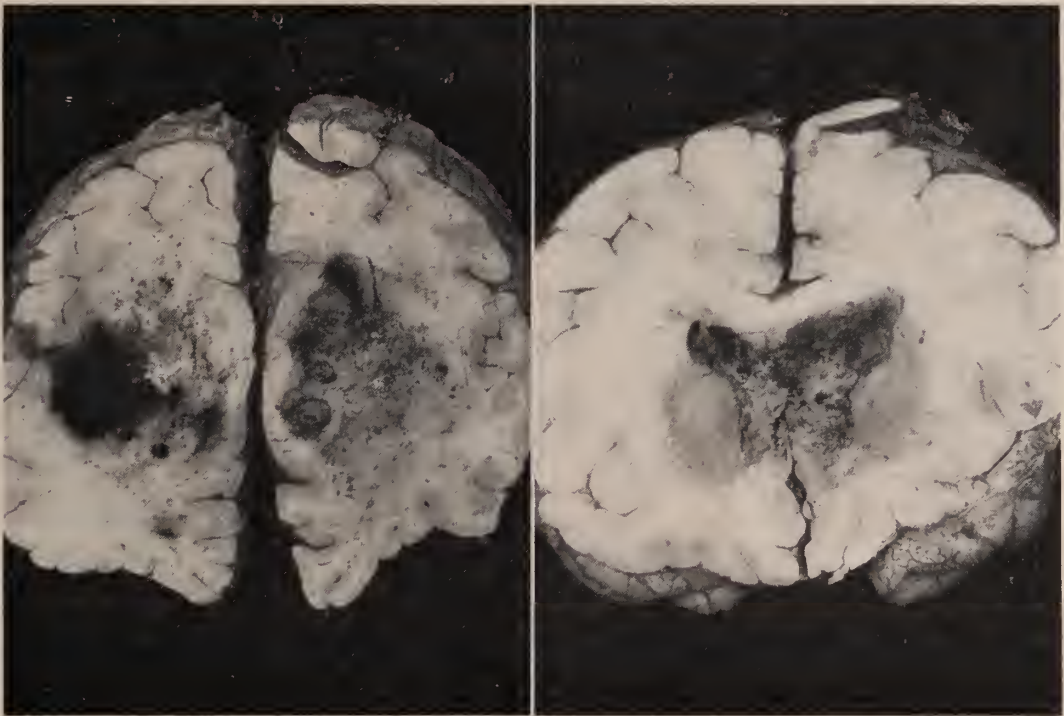


Fig. 11a.—Glioblastoma multiforme in a 61-year old man. Infiltrative mode of growth. Both frontal lobes involved. Extensive hemorrhage in right hemisphere. Necrotic changes in both sides. Cortex spared.

b.—The same tumor at a more posterior level shows the sub-callosal and peri-ventricular types of growth and again the hemorrhagic and necrotic appearances of the tumor.

tumors can be seen in macroscopical examination and most of the histopathological findings are but confirmations of what a careful and systematic study of the gross specimen yields.

Brain tumors must be studied as to *size*, *color*, *consistency*, *age*, *mode of growth*, *location*, *structures involved*, *secondary changes*, and *effect on the rest of the brain*. The *size* of a brain tumor is not always in proportion to its destructive effect as shown by the clinical picture, the effect on the rest of the brain and the outcome. The *color* is indicative of blood supply, pigmentation or degeneration

toms not occurring before the tumor has reached a certain size. Since the various types of brain tumor have their predilection for certain regions (which, however, is not an absolute one) the study of the *site* of the tumor and the *structures involved* may yield some information about the biological and pathological behavior of the neoplasm. But by far the most important gross feature to be studied in brain tumors is their *mode of growth*. The *expansive* and the *infiltrative* growth are two fundamental types, each of them being related to the specific biological behavior a given brain tumor may show.



It is to the credit of J. H. Scherer<sup>18</sup> to have made the study of the mode of growth a central problem of glioma research. He distinguishes four modes of

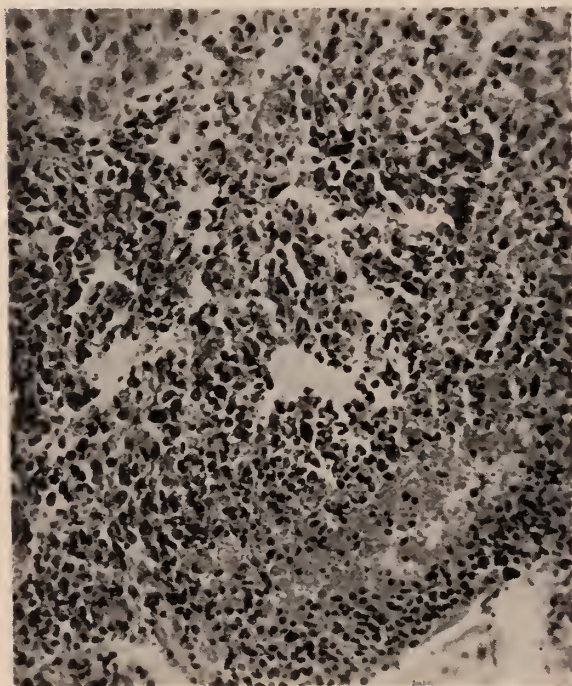


Fig. 12.—Microscopic appearance of the same tumor.  
H. & E. stain x 190.

growth, namely purely expansive, infiltrative, primary diffuse and multicentric growth. Purely expansive growth is shown by ependymoma, infiltrative growth by the enormous majority of gliomata the zone of growth of which is very widespread. Astrocytoma is a typical example of primary diffuse growth in which there seems to be no formation of a definite tumor but simply a glial overgrowth. Multicentric growth is seen in 20 per cent of glioblastoma multiforme; it seems hardly possible to distinguish this type of growth from metastatic growth.

As a rule, a purely expansive growth which simply pushes aside the surrounding structures, is a criterion of benign forms while infiltrative growth which invades the neighboring tissues is indicative of malign neoplasms. Exceptions, however, as well as intermediate forms must be admitted in brain pathology. *Secondary changes*, such as hemorrhage and necrosis, can also be seen in gross study and they too are criteria of malignancy, since they are due to the rapidity of growth and relatively poor blood supply although the latter may be rich in

itself. The *effect* a brain tumor may have on the rest of the brain may lead to edema, flattening of the convolutions, distortion of the neighboring structures, the ventricular system and even a whole hemisphere. This brief survey of what may be learned from gross study shows that histopathological examination of the type of the tumor and its classification is but one step in the whole of tumor study, although a very important one. We have been impressed for years with the *relatively small number of classical tumor types in old people committed to a State Hospital*, and we wonder if our classification of brain tumors on histogenetic grounds is but an ideal scheme to which nature is frequently unwilling to adjust itself; but this holds true for all of our classifications.

The last and the most difficult step will be the attempt to *correlate* the brain tumor with its symp-

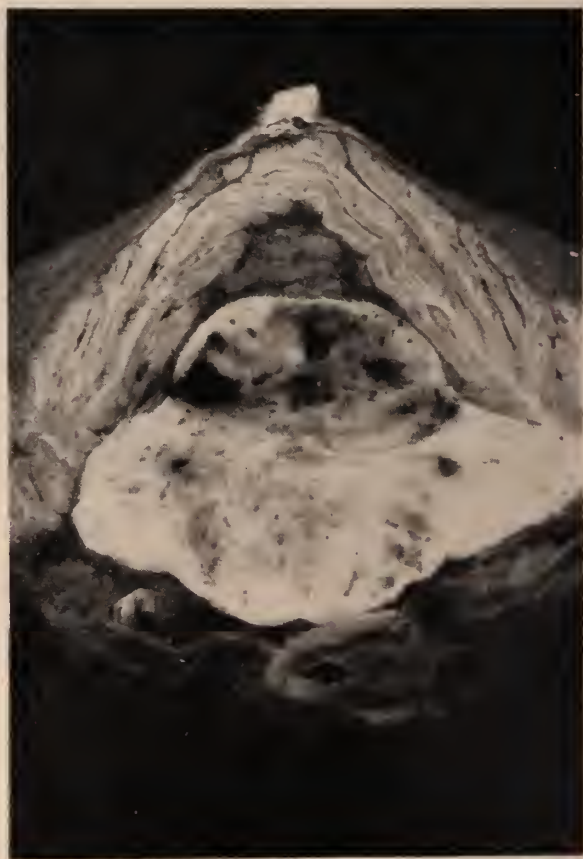


Fig. 13.—Pontine hemorrhages in the same case.

tomatology. It is a well known fact that the nature of the brain lesion is a determining factor in cerebral localization. In traumatic lesions many symp-



toms (sometimes all of them) may be transitory in character, while they are mostly persistent in progressive lesions such as tumors. In traumatic and vascular lesions the first symptoms (or the initial stage) may be due entirely to cerebral shock or diaschisis, which in its turn will be overcome, particularly by a young and otherwise healthy brain. We cannot expect cerebral shock to be a striking feature in brain tumors, cerebral shock being by its very nature a very acute mechanism due to a sudden and explosive event (mechanical or vascular accident). Therefore, the first symptom (provided it is not a pressure sign) in a given tumor history may turn out to be a residual one and already have its localizing value and it may indicate to the neurosurgeon as well as to the neuropathologist the point of origin of the neoplasm. On the other hand, tumors are frequently widespread and invasive processes, inducing symptoms in distant regions from edema or pressure, thus rendering difficult and sometimes impossible our effort to correlate the lesion with its symptoms. Generally speaking, our attempt to correlate lesions with symptoms is based on pathological facts. Disturbed behavior may, indeed, be related to a given brain lesion, but this does not mean that the disturbed behavior has its seat in the region involved. Tumor research can never reveal a center of the personality; it can only reveal local lesions and relate them to changes in behavior.

#### NEUROPATHOLOGICAL STUDY OF OUR SERIES OF BRAIN TUMORS

With the exception of the two very small meningiomas, most of the tumors considered in this series were of considerable size; one glioblastoma multiforme and one metastatic tumor were small growths. As to location: there was one *parasagittal meningioma* and one *meningioma of the olfactory groove*.\* In the glioma group,† the *frontal lobe* was

most frequently involved, both frontal lobes in one instance, the right one in another case. The right *temporal lobe* was involved in a third one. As usual, all of the gliomata occurred in the cerebral hemispheres. The meningiomata revealed a purely expansive *growth*. But only one glioma showed the characteristic infiltrative growth of this type of brain tumor, while in two others the neoplasms, in spite of their definitely malignant character, were rather well defined tumors. One of them was a recurrent glioblastoma. Microscopical examination of the structures at some distance from the tumor revealed cystic degeneration, hemorrhages and invasion of the perivascular spaces by tumor cells (J. H. Scherer's<sup>18</sup> so-called perivascular growth or secondary structure), thus indicating a much more infiltrating growth than was to be expected on the ground of macroscopic study. The other apparently well-defined glioma was also more infiltrative on microscopical examination than could be suspected by gross examination. Here the absolute necessity of a systematic and complete histopathologic study becomes obvious, and in stressing the importance of gross study we do not want to over-emphasize the latter. The metastatic tumor was a rather circumscribed growth. All of the malignant types showed *secondary changes*, namely, hemorrhages and necrosis. Giant cells and mitotic figures were frequent in the glioma group. In two instances there was a discrepancy between the size of the tumor

gittal swelling of 30 years duration), the others being 55, 54, 50, 49, and two of them 48 years of age, the great majority thus exceeding the average age. In the Moersch group of 25 patients who had meningiomas the history of symptoms ranged from three months to a possible twenty years, with an average duration of five years.

\*P. Bailey<sup>2</sup> found the greatest number of meningiomas at the age of 45. Cushing and Eisenhardt made the statement that meningiomas were rare both in childhood and old age. However, Moersch *et al*<sup>10</sup> found in 100 cases of verified tumors of the brain, occurring among patients 60 years of age or more, 25 meningiomas. The average age on admission proved in the series of Cushing and Eisenhardt<sup>6</sup> to be 46.6 years, the average age of females (42.9) being nearly ten years younger than that of males (52). The age of symptomatic onset averaged about 38 years. Among the few examples of tumors evidently of *long standing*, quoted by Cushing and Eisenhardt,<sup>6</sup> there were only two young persons (serial number 210, 33 years of age, with a "retrobulbar neuritis" of fifteen years duration, and serial number 50, 35 years of age, with parasag-

†According to a re-classification of the 10 neoplasms found among 205 autopsies at Eastern State Hospital by Zfass and Riese<sup>21</sup> there were 4 glioblastoma multiforme, being 42, 57, 64, and 76 years of age (at the time of admission), the average age in this type of glioma being 41 years, according to Bailey and Cushing<sup>3</sup>. The duration of clinical (tumor) symptoms in the Riese-Zfass group ranged from 12 days to 3 years, the average survival time being 12 months according to Bailey and Cushing. The three glioblastomas considered in this new group were 41, 60 and 61 years of age. Duration of tumor symptoms ranged from 4 weeks to 5 months. Both these Eastern State Hospital groups are too small to admit of any average survival time. But in the Moersch *et al*. group of patients who had glioblastoma multiforme (35 cases among 100 verified tumors of the brain occurring among patients 60 years of age or more) the histories covered a period of one month to 3 years. The average duration of symptoms was seven and four-tenths months. If the two longest histories are excluded as being inaccurate in the matter of the period of symptoms, the average duration was five and six-tenths months.

and its effect on the rest of the brain; these were neoplasms of but moderate size but nevertheless associated with considerable edema.

*Histopathological examination* revealed:

- 2 Meningiomas, one fibrous, one cellular.
- 3 Glioblastomas, one atypical with calcification.
- 1 Metastatic cancer (Grawitz's tumor?).

We conclude with some remarks on correlation. In two cases the tumors were almost limited to definite cytoarchitectonic areas. The symptoms related to these areas were present, namely, conjugate deviation of the head and the eyes to the side of the lesion in a glioblastoma involving area 8 of Brodmann, the so-called frontal eye field, and motor aphasia in the metastatic cancer involving areas 44 and 45 of Brodmann. In the latter case the second frontal convolution, the first temporal convolution and the pre-central gyrus were spared. In both these cases the subcortical matter was involved. These cases were indeed true show-pieces of cerebral localization. The occurrence of mental changes in those cases in which the frontal lobes were involved can now be considered as a trivial fact. However, in one instance mental changes were related to a tumor of the right temporal lobe. In this respect it might be interesting to recall that Keschner, Bender and Strauss (1936)<sup>12</sup> observed abnormal mental reactions in 94 per cent of tumors of the temporal lobe. There was no significant difference in frequency and nature of the mental symptoms caused by a tumor of the right and those caused by a tumor of the left temporal lobes. The fact that mental changes occur in tumors of the right temporal lobe in right-handed individuals deserves greatest attention. It seems to indicate that the involvement of the dominant hemisphere is not a necessary condition for the appearance of mental changes.†

†Hughlings Jackson was convinced that "disease of the right cerebral hemisphere is more likely to cause mental defect (other than affection of speech) than is disease of the left; and that mental defect is more likely to result the farther back in the hemisphere the damage is". That the posterior rather than the anterior lobes of the cerebrum are concerned with "the highest intellectual operations" was also the view of Charlton Bastian, in 1865, outstanding clinician of the early era of cerebral localization. This historical remark will be of great interest to our generation inclined to relate mental disturbances to the anterior lobes of the brain and particularly to the left hemisphere in right-handed persons. A revival of the Jacksonian views are to be found in the conclusions which L. J. Karnosh and W. J. Gardner (1941) derived from their resections of the right hemisphere (invaded by extensive tumors). The authors concluded: "While it may be acknowledged that the left

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hemisphere is vastly more important in providing the fundamental language functions of mind, from these studies it appears that the right hemisphere is also essential, particularly for the higher integrative functions such as those which deal with insight, judgment, and emotional control."

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### Facts On Use of DDT.

Since the proper use of DDT requires special knowledge and training, a bulletin has been published as a technical guide for the Army to its safe and efficient use, Major General Norman T. Kirk, Surgeon General of the Army, has announced. The publication contains information on the precautions to be taken in handling DDT, its mode of action in insect control, and the proper methods of application of the DDT insecticide items issued by the Army.

It is emphasized that, although DDT may be safely handled as an insecticide, it is, nevertheless, a toxic material. Poisoning may occur from ingestion of DDT or by absorption of DDT solutions through the skin. DDT powder and creosols are not absorbed through the skin, and have been found to produce no ill effects when inhaled in small amounts. However, in conditions where air currents do not carry away the dust from the user, it is wise to wear suitable respirators as protection against excessive inhalation.

DDT acts on insects both as a contact poison and as a stomach poison. Studies have shown that the poisonous effect of DDT on mosquito larvae is fully as powerful as that on the adult insect, although on some other insects, such as flies, the larvae are not equally affected by the insecticide. In applying DDT as a mosquito larvicide to open water receptacles, a prolonged effect may be obtained because of the residual action of the chemical. However, in applying it to natural water bodies the

effect is much shorter, due to the binding action of mud in the water, which apparently checks the effectiveness of DDT. It should also be considered that amounts of DDT greater than 0.2 pound per acre may prove fatal to fish and wild life. For extermination of insects such as ants, roaches, fleas, bedbugs and flies, DDT oil solution or powder should be used, with particular attention to cracks, holes, and seams in walls, floors, and bedding, as indicated. One of the most valuable characteristics of DDT lies in its tendency to remain deadly to insects over a prolonged period of time. In applying DDT solutions to walls and other large surface areas, a coarse spray is usually employed, but in applying it to screens or mesh surfaces, ordinary paint brushes may be used. Although the effectiveness of the treated areas against insects persists for some time, the insects which come in contact with the chemical may not die until an hour or more has elapsed, and immediate death should not be expected.

When applying solutions of DDT in kerosene, precautions concerning the inflammability of the kerosene should be observed. Care should be taken to keep electric motors and other sparking or heating apparatus from the zone of spray. No open fires or smoking should be permitted until the spray has dried and ventilation is complete. The kerosene in the solution is harmful to rubber equipment and may cause a mild skin irritation when in contact with the skin.



## SOMATIC NEUROSES\*

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In the last edition of Osler's Principles and Practices of Medicine is found this passage, "Psychosomatic medicine is that part of medicine which is concerned with an appraisal of both the emotional and the physical mechanism involved in the disease processes of the individual patient with particular emphasis on the influence that these two factors exert on each other and on the individual as a whole."

I have in my library a book on Diseases of the Nervous System published in 1840, and in the chapter on general observations the author, in discussing muscular motility, has this to say: "as the muscles which perform the excito-motory action contract either habitually or occasionally from the stimulus of volition, these movements may be considerably controlled by the mind; thus a strong exercise of the will may suppress or diminish their force." And, again, in the same chapter, he says, "the mind is also capable of exciting an occasional influence over the muscles of organic life, as is well illustrated by the increased or diminished action of the heart from anger or fear."

We see then that in the doctor 104 years ago, although he did not understand the mechanism of the relationship between psyche and soma, his thinking was certainly in the direction of psychosomatic medicine.

The doctor of today, after spending some years in premedical work, four years in medical school and several more years in the hospital, finds when he enters into a practice of his own that the diseases about which he knows more from his studies and experience, represent the smaller number of disorders which he will be called upon to treat and to manage. The more common diseases of some years ago, such as typhoid fever for example, are well understood from both the etiological and preventive standpoints, so that it is now almost a rare disease. But the frequent disorders that the young doctor will see, he will not know any more about than the doctor of thirty or more years ago. One of these disorders is hypertension and hypertensive heart disease. And so, it is the chronic diseases which are

the disabling disorders that baffle us and in which many of us are not interested. Some statistics show that half of the chronic diseases occur below the age of 45, and 70 per cent of them under 55. These findings might indicate that there should be, among other things, a different approach to the problem and this approach might be from the psychic angle, especially so since there are more beds occupied in the United States by nervous and mental patients than all other diseases combined.

In the study of disease we can no longer separate the nervous from the physical. We believe that somatic neuroses can lead to organic changes so that the condition in question becomes irreversible as the neuroses become chronic and the patient requires surgery for his ulcer or digitalis for his heart. If the early approach could be psychiatric and while the complaint is reversible, the patient might be saved an operation or a crippled heart muscle. We should then look at the machine as a whole and not one part to which symptoms call our attention; it is as necessary to study the patient as it is to study the disease. Later in the discussion I will give some illustrative examples which will demonstrate these points.

The physiologists have been of great help in our understanding of the relationship between soma and psyche. They have shown that there are physiological changes following the emotion of fear, of rage, etc. The snake charming the bird is a familiar example. The increased secretion of gastric juice following the odor of good food cooking is another. They have shown that emotional disturbances can cause changes in blood chemistry, such as in the metabolism of sugars. Dr. Dunbar, in her recent book on Psychosomatic Diagnosis, cites the case of a diabetic who had sugar in the urine every time she had an argument with her husband. There are some who believe that the seat of the emotions is in the hypothalamus, and Cushing said that mechanical irritation of the hypothalamus produces changes in the gastric secretion and motility, which is the proper environment for the development of ulcer.

It is not uncommon for a physician to tell a patient that he has no organic disease and that his symptoms are imaginary, and yet some of these pa-

\*Read as part of a Symposium on Psychiatry at the Combined Stuart McGuire Lectures and Department of Clinical Education, Medical Society of Virginia, at Richmond, April 6, 1944.

tients return later with an organic disease and with the same symptoms that he had before. In the light of our present knowledge it is impossible for a patient to have an imaginary complaint, and the symptom can be always explained by the mechanics of the relationship of psyche and soma. The author quoted at the beginning of this discussion did not know of the vegetative nervous system, yet he did realize 104 years ago the influence of mind over matter. Less than a quarter century ago the psychiatrist had little to offer the general physician, as a consultant, other than to give his opinion as to the sanity of an individual, but today the medical profession generally and the psychiatrist in particular have come to realize more and more the importance of psychosomatic medicine. Many people are wondering how it comes about that some are cured of their complaints by the irregular practitioners and charlatans. People are not interested in pathology and post mortem examinations, but they are interested in their complaints and how to be made comfortable and be cured. Until physicians cease thinking in terms of imaginary illnesses and more in terms of psychosomatic medicine the quacks and charlatans will prosper.

Not so many years ago the cause of hysteria was said to be disease of the uterus and its appendages and much earlier it was thought the hysterical globus was due to a wandering uterus. Many women in the past have been castrated to cure some nervous symptom, which, of course, gave them a double dose of nerves for many of the remaining years of their lives. With all of our shortcomings we have come a long way.

And now I wish to discuss some of the more specific problems concerned in the somatic neuroses. When one becomes emotionally upset, such as crying, he usually has some idea why he is crying. But when one has a gastric neurosis he is unaware of the psychological reason for his stomach distress, and he visits one doctor and then another; he is given diets, acids and alkalies and he still has his stomach symptoms. He searches for an organic explanation and refuses to believe that a neurosis is the cause of his complaint. Until he does believe that, one of two things happen: he either continues with his neurosis, or, after some years, his condition becomes irreversible and he really develops an ulcer. It is the fear and anxiety which is deep seated and

excluded from consciousness and of which he is not aware that is the cause of his reversible gastric symptoms and which may be the beginning of organic disease. There are two types of fear—the conscious and the subconscious. The soldier going into battle is afraid but he knows what he is afraid of and this makes him brave in spite of his fear of death. The anxiety neurosis victim is afraid of fear and he does not know what it is but it is expressed in organic dysfunction, and this is his complaint.

Last week I referred a man 45 years of age to a surgeon for gastric resection for duodenal ulcer. I had known him for many years but not until June of 1942 did he consult me professionally and only then because he had been told by many doctors that there was nothing organically wrong with him. He had had "stomach trouble" for 20 years. Ten days before coming to me he began to have insomnia. In his own words he was nervous and jittery, had gas pains and his stomach was nervous; he had nausea as soon as he began to eat but his chief complaint was insomnia which depressed him. His physical examination was negative. The G. I. x-ray series was essentially negative and he had a moderate gastric hyperacidity. He was not seen again professionally until February of this year. He was still nervous but gave a fairly typical history of duodenal ulcer, which was confirmed by x-ray, and he was referred to the surgeon.

The story of this patient demonstrates the reversible phase and the irreversible phase and the time of the change of the two phases can almost be determined. He is in comfortable circumstances and lives with an unmarried sister who also is very neurotic and is in constant fear that her brother will marry and leave her to live alone. Both are devout Catholics. The father died when the children were small and they were raised by the mother in a very sheltered and religious environment. When the patient was 25 the mother died and this left him with the full responsibility of the sister and the management of a small estate. The mother had requested him never to leave his sister alone and any recreation he had had after business hours was always with the sister. It was just after his mother's death and his increased responsibility that he became nervous and developed his stomach symptoms. He outwardly became resigned to his lot but actually he rebelled against the promise to his mother which prevented



him from marrying and having any love life. In spite of this handicap he managed to get along fairly well with his gastric neurosis until one night in 1941 he had a severe mental shock. It was soon after this shock that the typical ulcer symptoms began.

There are many theories as to the cause of stomach ulcer but I do not believe anyone can deny the psychogenic factors concerned in its beginning. It is well known that ulcer occurs in the individual who lives under mental stress and strain and who gets little physical exercise. Doctors and lawyers are notorious subjects. Under such stress the vegetative nervous system, which is somewhat under the control of the mind, begins to play tricks with the function of the stomach; gastric motility is increased, the acid cells are stimulated and there is increased secretion of hydrochloric acid. At this stage the situation may be reversible and sometimes can be brought about by so simple a change as a short vacation. But if the situation is not changed, sooner or later, ulcer develops and the stomach disorder becomes irreversible and a vicious circle is developed; the patient becomes more nervous and upset because of the pain and the pain becomes more marked because of the nervous tension. Possibly there are other factors concerned in the production of ulcer but certainly the psychogenic factor is the most important.

Time will not permit the discussion of all diseases and their psychiatric aspects but there are several others I do wish to bring to your attention. Probably one of the best examples of a vegetative nervous disease is hyperthyroidism. To bring out certain points in the etiology of the disease I wish to report and to elaborate upon the history of the following case.

A girl of 29 came to me a year ago complaining of "nervousness". Six years ago she developed some swelling of the ankles and because she thought she was not receiving the right kind of advice and treatment she went to Baltimore and fell into the hands of an exceedingly competent surgeon who said she had hyperthyroidism. After a few weeks of bed rest the thyroid was removed and unfortunately the vocal cords were injured. For the next year she could not talk above a whisper.

When she came to me she stated she had always been nervous but she dated her present illness from

the day of her thyroidectomy. She developed the idea that she would do harm to her younger sister and she reasoned that if she would harm her sister whom she loved she would do harm to others. Having such ideas she thought she was insane, as no sane person, she said, would think such thoughts and to use her own words she became a wreck. She was anxious and apprehensive and her greatest fear was that of losing her mind. When alone on the street she had a fear of death and was afraid that she would faint and create a scene.

The history of her life shows some rather interesting points as related to her fears and to the development of her hyperthyroidism. She was born in poor circumstances, the daughter of Jewish emigrant parents who had a store during her early childhood in the colored section of the city. After much prodding, she remembered that her mother constantly reminded her that negroes were dangerous people and scared her by telling her they were "bogey men" and were to be feared. She was very unhappy in her home and at this early age was nervous and, as she put it, had many imaginary ailments. As the circumstances of the parents improved they bought a home in, at that time, a much better neighborhood, when she was 12. She attended school and graduated from high school, apparently making a fair life adjustment. When 23, after a fuss with her fiancé the engagement was broken, and it was about this time that the swelling of the ankles occurred and her thyroid was removed. When she awoke from the anesthetic and found she could not talk she was panic stricken. She was encouraged and told that she would be all right in a week, and then week after week she was told the same thing until 52 weeks passed before she was able to talk. During the year she could not talk she felt lifeless and dead and that she would never recover; she was sure she would die. This feeling, she said, gave her the idea that she wanted to have a sex experience before she died. She had many experiences, finally becoming pregnant and had an abortion. After this her fears were increased and became more fixed and she was practically an invalid. She then went to a sanatorium where she was given shock treatment which did her more harm than good and gave her an added worry. During the past year she has improved so much that she became engaged which has given her some sense of security.



I do not know whether or not it was essential that her thyroid be removed but possibly if she could have had a psychiatric approach she might have been saved an operation and her glandular disturbance could have been brought back into balance.

I spent an evening with this surgeon talking about the relationship of surgery and psychiatry and he said he thought every chronic surgical patient should be first studied by a psychiatrist before subjected to surgery. If surgeons would do some thinking in this direction possibly some patients would be saved an operation.

The psychoanalysts tell us that we all have much repressed material and when this chasm can be bridged it gives one some insight into why our organs behave in various ways and why we react to situations as we do. Dr. Jelliffe, in a paper entitled, "Psychopathology and Organic Disease", published in 1932, cites the case of a woman seriously ill with hypertension and kidney disease. She had been told that she had kidney disease because she had hypertension, and hypertension because she had kidney disease but she was still seriously ill. He explored her unconscious and found that even though she had four children she was frigid. Her erotic fixation was urethral and to get her gratification she urinated quarts and drank gallons to get the quarts and finally the blood vessels and kidneys rebelled. She lived for eight years a useful and happy life after her husband had been told she had about six months to live.

Some of the milder conversion states do not need a psychoanalyst to uncover the basis for the complaint. A woman came to find out why she had a severe headache just on Sunday morning. She had been examined by several doctors who could find nothing wrong. A few minutes' talk brought out the fact that she was frigid, intercourse was distasteful to her and Sunday morning was the only time her busy husband felt like having sex relations because he did not have to work on that day.

A young girl of 17 in the last year of high school worked as a substitute telephone operator on Saturday and Sunday and always had a backache beginning Saturday morning just before leaving home or soon after getting to work. She kept house during the week for her father, a Scandinavian, who believed every one should learn how to do something. The girl was unaware that she resented her father's

wish that she work on week-ends after going to school all week as well as attending to the house-keeping. Headache powders, back braces and fusions do not cure complaints like these.

There are probably many factors concerned in the development of hypertension and hypertensive heart disease but the prospective hypertensive is a rather definite type of individual. They show efficiency and independence, are susceptible to threats and anxiety relative to occupations and to their finances, susceptible to mental stress and are easily upset and frequently have migrainous types of headache. They are quick and jerky in their conversation as well as physically.

This type of individual, who develops hypertension, has something in his gastric juice that the slow lazy hypotensive does not have, and *vice versa*. Doles has shown that by transferring the gastric juice from the hypotensive to the hypertensive the blood pressure is lowered and remains so as long as the patient is fed the hypotensive gastric juice. If the gastric juice from the hypertensive is put into the stomach of the hypotensive the blood pressure is raised. This intrinsic factor may be developed in some way through the vegetative nervous system and its control of the function of the stomach. There are many interesting but far from proven studies of hypertension, but it seems to me that a great many of these theories and some facts revert to the psychic and somatic relationships.

In 1920 a man of 50 consulted me because of fatigue and nervousness. His heart was normal, his blood pressure was 120/68 and his arteries were soft and pliable. I saw him many times each year and have a complete record. I was with him when he died in 1941 of a cerebral hemorrhage. His blood pressure was 240.

This man was a city employee and his salary was not sufficient for him to save a great deal for his old age. As he grew older he became more worried, more apprehensive and developed more somatic complaints. His blood pressure began to creep upward and the more his nervous symptoms became the higher his pressure rose until he died twenty-one years after my first contact with him. I had the opportunity to see the psyche and the soma go along hand in hand, the symptoms of both increasing year after year until his death. Who knows, without some guidance, his end would not have

come sooner?

One could go on without end giving examples of simple and more complicated cases of the psychosomatic diseases. But there are several plain facts concerned that we should keep in mind. When we investigate patients with somatic neuroses we often find that apparently the beginning of the illness is some emotional reaction to a disturbing event which might seem trivial but acts as the straw that broke the camel's back. There are other cases in which the trauma cannot be found in consciousness and will have to be "dug out" of the unconscious by means of psychoanalysis. As our experience increases one is able to tell in a general sense what diseases are peculiar to certain types of people. This is brought about by a study of the personality which in common language is one's reaction to situations, his carriage, his facial expression, his deportment in

general and a host of other characteristics both mental and physical.

Most of the psychosomatic complaints are single at any given period but one may have many complaints, each directed to some particular area or organ. They may drop one complaint and pick up another so that it has been said that one may grow out of one complaint and grow into another. This may be explained by the different functional phases of the ductless glands.

And so, in conclusion, one might say that there are a host of diseases which at first glance might seem widely separated and unrelated but if analyzed in more detail, especially as to their etiology, could be brought together in one group and designated as psychosomatic disorders.

*229 West Bute Street.*

### Upjohn Company Health Messages Published in Book Form.

Every physician in the United States will receive during the coming months copies of a handsome new publication, "Your Doctor Speaks", issued by The Upjohn Company. This handsomely designed book contains a series of health messages, part of The Upjohn Company educational health campaign, which have been appearing monthly in the well-known magazines. The basic purpose of the book is to enhance the knowledge of the advances made by medical science, and the doctor's ability to cope with disease, so that the public will seek medical attention whenever necessary and as soon as possible.

Physicians who have not yet received their copy of "Your Doctor Speaks" are invited to write Upjohn, Kalamazoo 99, Michigan.

### New Books.

The following are recent additions to the Library of the Medical College of Virginia, and are avail-

able to our readers under usual library rules:

- Rand—The neurosurgical patient.
- Ray—How never to be tired.
- Richardson—Patients have families.
- Robinson—Sexual problems of today.
- Rost—The pathological physiology of surgical diseases.
- Sadler—Modern psychiatry.
- Schaeffer—Anatomical atlas of obstetric diagnosis and treatment.
- Senter—Outlines of physical chemistry.
- Stewart—Stereochemistry.
- Taylor—Outlines of medical jurisprudence.
- Thomson—Diseases of the nervous system.
- Transactions of the section on Ophthalmology. 1944.
- Vaughan—Epidemiology and public health. 3 vols.
- Vorisek—Qualitative chemical analysis.
- Walter—Genetics, an introduction to the study of heredity.
- Walzer—Galen on medical experience.
- Warthin—The physician of the dance of death.
- Wickenden—The wayfarers (a novel).
- Williams—Notes on General Pathology. M.C.V.
- Wood—An epitome of the materia medica.
- Wright—A textbook of obstetrics.
- Zsigmondy—The chemistry of colloids.

## THE CONNECTING LINK\*

J. H. HAGY, M.D.,  
Abingdon, Virginia.

No doubt that when some of you noticed my subject you thought I was going to try to enlarge on the subject that man or the human race was only a super development of the monkey, ape or baboon, but I want to assure you that I couldn't if I wanted to, and would not want to if I could. My whole purpose in presenting this paper is to try, to use the phrase of one of my old debating colleagues, to introduce to the newer members of the Society the founders or organizers of the Wise County Medical Society who have now past and gone to their reward. With one or two exceptions, I think I am the oldest member of the Society in point of Society membership. One exception is Dr. Holley and, perhaps another is Dr. Gilmer. Dr. Baker is probably older in the point of time, but I don't think he became a member of the Society until several years after the ones I have just mentioned, as he practiced in Lee County several years before coming to Wise. Just what year the Society was organized I have not been able to find out. Our present Secretary informs me that the oldest minutes now in his possession are those of 1922, but at that time this Society was quite grown up.

I landed in Wise County in August, 1904, at Toms Creek, and my name was presented to the Society the following September by Dr. Garland S. Wiley, who was the Chief Physician at Toms Creek at that time. I am under the impression that the Society was organized in 1901 or 1902 by the following doctors, viz.: Dr. H. M. Miles, of Wise; Dr. T. M. Cherry, of Wise, and later Norton; Dr. G. W. Tompkins, of Toms Creek; Dr. J. W. Kelly, of Big Stone Gap; Dr. M. L. Stallard, of Norton, and later Appalachia; and Dr. Joe Wolfe, of Coeburn. Every one of these men were not only good physicians, but were a credit to the medical profession and to the county and community in which they lived. I trust that I will not be boresome by taking these up in detail for the benefit of our younger members. Every one was extremely ethical in this profession—it was almost a part of their religion, and for some of us it might be well to emulate.

Dr. G. W. Tompkins was a native of Christiansburg, Va. He came to Toms Creek soon after the Virginia Iron, Coal and Coke Company began mining coal there. He was the Chief Physician there until around 1903 when he moved back to his old home at Christiansburg, but, like some of the rest of us, he was so inoculated with the coal field fever that he did not remain long there and came back to Coeburn and did private practice, together with the mining practice at Cranes Nest, which was a plant of the Clinchfield Coal Company. He lived midway between Coeburn and Cranes Nest, at which place he passed away several years ago.

Dr. T. M. Cherry was a native of Ohio. He first located at Clinchport, Va., and later moved to Wise, where he married a Miss Flanary, a daughter of one of the wealthiest, as well as one of the most prominent families in the county. He was especially noted for his diagnostic ability. Regardless of how trivial the case might be, or whether or not there was a cent in it, he would not give it up until he had unraveled it to his entire satisfaction. I remember very distinctly while I was at Dorchester, he went with me to see a Mrs. W—. She described the pains as extending from her head to her feet very, very quickly, so Dr. Cherry informed her he did not have any medicine that would catch a pain like that—that fast—and walked out. Mrs. W— had a very coarse voice and Dr. Cherry a very fine one and the contrast was comical.

Dr. H. M. Miles was a native of Lee County, son of a blacksmith, and located at Wise soon after his graduation in medicine. He was very religious and was very careful that 10 per cent of his income went to the church. He was a very strong prohibitionist, and, as my old friend Dr. Stallard often told me, he hated a drunk man worse than the devil hated Holy Water. Later he specialized in eye, ear, nose and throat and located in Norton, where he enjoyed a very wide practice.

Dr. J. W. Kelly, another charter member of the Society, was perhaps less known to the doctors of Wise County than any other of the original members, as he quit the practice of medicine soon after the Society was organized and went into the coal

\*Read before the Wise County Medical Society, December 8, 1944.



business, at which he was very successful. I don't remember ever seeing him at a Society meeting. He married into a prominent and wealthy family of Wise and is the father of Creed Kelly, State Mine Inspector, of Big Stone Gap.

Dr. Joe Wolfe was too well known to all but the very newest members of this Society for me to try to add anything with which you would not be already familiar. He was a man of men, perhaps the most beloved and respected man in the county—both as a man and as a physician. It is too bad we can't have many men that measure up to where Dr. Wolfe did. I dare say that if he had run for any public office in his community, he would have gotten 98 per cent of the vote regardless of creed, color, or previous degree of servitude. Peace to his ashes!

I come to the last, but not least in importance of the charter members of the Society—Dr. M. L. Stallard, another native of Lee County, whose father before him was a physician. He early located in Norton and had an immense practice. He not only had all the practice in Norton, but had charge of all the mining practice between Coeburn and Appalachia. At one time he had under him four assistants. Some of his assistants at one time or another included Dr. R. P. Carr, Dr. Paul Kernan, Dr. Malcolm Campbell, Dr. Bill Painter and Dr. Harry Smith. I had the privilege of working for him for several years at Blackwood and at Dorchester, and later to be associated with him in private practice at Appalachia before going with the Stonega Company. He had his faults, of course, as all of us do, but he was a great man and a great doctor. No man was more loyal to his friends and the profession than he. He was a natural psychologist. I am sure every doctor who ever met him in consultation (and most every one in the county did at some time) never regretted it because he always left the patient, as well as the doctor, feeling better—not by the medicine he would prescribe, but by that wonderful pep talk he would give them. He was strictly ethical with his fellow practitioners and was never known to hit under the belt.

While working for him at Blackwood, a little incident happened that made a deep impression on my mind and which I shall always remember and cherish. I had a sick baby in the upper end of the camp, and the parents—like many others who get worried and impatient when their child does not get well as quickly as they think it should, especially

when the doctor in attendance is new to them—phoned for Dr. Stallard to come to see the child. He told them he would be down at a certain time. When he did come I was sitting on the porch at the next house. He went in and the parents began telling him about the baby, but he stopped them abruptly and told them he would not hear anything or examine the baby until I was present. I heard him tell them this, as I walked in about that time. I remember a time when he was called to see a patient that another doctor had been treating or perhaps was treating, but he refused to go. When reminded that this other doctor had called on one of his patients not long before and he had an opportunity to get even, he still said no—because the other man was unethical, this was no reason for him to be so.

I mentioned a while ago that he was a natural psychologist—but that did not mean he did not believe in medicine. He had more office practice at one time in Appalachia than any doctor in the county, or surrounding counties. They came from other states to see him and I have known him to give one party prescriptions totaling some two or three pints. I also know that a certain drug store with which he was connected declared a thousand per cent dividend during World War No. 1, and this was made possible by his prescriptions. He has been dead some 15 to 20 years, but until a short time ago some of his prescriptions were still being refilled. Truly a great man has gone from among us!

There may have been some charter members other than those I have mentioned, but these were the backbone of the Society. As I have said, I became a member in 1904 and Drs. Holley and Gilmer are the only other members now living who were members then. We were, therefore, the connecting links before 1906 to 1912 when Drs. Bowyer, Tudor, Hicks, Henson, Givens and possibly some others came on the scene.

I trust I have given a description of the founders of our Society to our newer members who did not have the pleasure of knowing them and associating with them. They were all gentlemen of the old school and put the practice of medicine on a high level, and I trust that it will never be lowered by this or the future membership. Judging by the present personnel, I don't think it will be.

I have had the honor of serving in all of its offices during my membership of forty years, and there was

one thing that happened while I was Chairman of the Board of Censors that I have been a little puffed up about. Several years ago, we had a chiropractor doing business at Appalachia. The Society instructed my Board to take any proceedings we thought necessary to get rid of him. The finances were arranged and legal services were being sought when I learned that our "would be" victim had decided very suddenly that his health was not good, and moved to New Mexico.

In conclusion, I want to say that I have felt it an

honor and privilege to be a member of the Wise County Medical Society. One would have to go a long way and look a long time to find a better bunch of men. I mean this collectively and individually. You have heard it repeated, I am sure—that we never properly appreciate anything until it is gone. Well, that is how I feel now about the fellowship of the Wise County Medical Society. To say that I miss it is putting it mildly, and unless I am kicked out I expect to remain a member the balance of my life.

### New Books.

The following are recent additions to the Library of the Medical College of Virginia, and are available to our readers under usual library rules:

Abrahamsen—Crime and the human mind.  
 Alcohol, science and society. 29 lectures.  
 Allen—Psychotherapy with children.  
 Baker—Introduction to superior children.  
 Baruch—Parents can be people.  
 Bauer—Contagious diseases; a guide for parents.  
 Beaman—Health, a text and workbook.  
 Bellows—Cataract and anomalies of the lens.  
 Boas—The unseen plague—chronic disease.  
 Bockus—Gastro-enterology. V. 1 and 2.  
 Boyd—Outline of physical growth and development.  
 Boyd—Preventive medicine. 7th ed. (2 cop.)  
 Cannon—The way of an investigator.  
 Corbin—Getting ready to be a father.  
 Cowan—Refraction of the eye. 2nd ed. 1945.  
 Culver—Musical acoustics.  
 Duke-Elder—Textbook of ophthalmology: diseases of the inner eye. v. 3.  
 Fast—The last frontier (A novel).  
 Fenton—Mental hygiene in school practice.  
 Gainey—An introduction to the micro-biology of water and sewage for engineering students.  
 Gray—Study guide textbook in anatomy and physiology.  
 Hartwig—A laboratory manual of general physiology.  
 Horovitz—Injury and death under workmen's compensation laws.  
 Huntington—Mainsprings of civilization.  
 Kunkel—What it means to grow up.  
 Langer—Psychology and human living.  
 Leonard—A laboratory guide to the study of developmental anatomy.  
 Lyle—Neuro-ophthalmology.  
 McCormick—A textbook on pathology of labor, the puerperium and the newborn.

McDowall—Sane psychology: a biological introduction to psychology.  
 McKinney—Psychology and personal adjustment.  
 Maslow & Mittelman—Principles of abnormal psychology.  
 Morgulis—Experiments in physical and physiological chemistry.  
 Murphy—The diagnosis and treatment of acute medical disorders.  
 Nelson—Intimate bacteriology, a text and laboratory manual.  
 Nelson—Laboratory exercises and self-study outlines in general bacteriology.  
 Nicolson—Twenty years of medical research.  
 O'Shea—The child; his nature and his needs.  
 Page—Arterial hypertension, its diagnosis and treatment.  
 Peltier—Laboratory manual of general bacteriology for pre-nurses.  
 Pratt—Soldier to civilian problems of readjustment.  
 Rahn—Injury and death of bacteria by chemical agents.  
 Rogers—Counseling and psychotherapy, newer concepts and practice.  
 Ross—The common neuroses: their treatment by psychotherapy. 2nd ed. 1937.  
 Shapiro—Applied anatomy of the head, neck.  
 Stackpole—Laboratory manual in anatomy and physiology.  
 Stoddard—The meaning of intelligence.  
 Stone—The newborn infant. 3rd ed. 1945.  
 Thornton—The social component in medical care.  
 Thorp—Black widow spider.  
 U. S. Gov't Print. Office—Microanalysis of food and drug products.  
 Wallin—Minor mental maladjustments in normal people.  
 Walshe—Diseases of the nervous system described for practitioners.  
 Walzer—Galen on medical experience.  
 Wilson—Currents of an injury displayed by normal and injured tissues.  
 Young—Personality and problems of adjustment.

## CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,  
MEDICAL SOCIETY OF VIRGINIA

This patient, a twenty-one year old, para I, gravida II, was in the eighth month of pregnancy. There had been no prenatal care. The first symptom of this trouble was epigastric pain and vomiting followed a few hours later by watery stools, abdominal cramps and distention. On the fourth day, a three pound fetus precipitated and the placenta was delivered spontaneously shortly afterwards. A rather excessive hemorrhage followed which was checked when the physician arrived. The patient was then transferred to a hospital. Examination on admission revealed an acutely ill woman with a tremendous amount of abdominal distention. Temperature was 102.4, pulse 160, respiration 20, hemoglobin 84 per cent, red blood count 4,800,000 and white blood count 7,550. A Wangenstein suction was used with prostigmin and rectal tube. A blood transfusion was given the day after admission and another on the following day. She seemed to be improving at this time. It was thought that an abdominal mass was felt in the right lower abdomen. Under local anesthesia, an incision was made but only generalized peritonitis was found. No attempt was made to remove the appendix. Sodium sulfathiazole was given

intravenously. Symptoms progressed until death occurred on the sixth day post-partum. Autopsy showed a gangrenous appendix ruptured in three places. The abdomen was filled with pus.

### COMMENT

This case was classified by the committee as a non-preventable medical death due to neglected appendix complicating pregnancy. There seemed to be some question as to whether it should be called an obstetric death but, regardless of the classification, suitable prenatal care might have spared this patient. Prenatal care often involves the recognition of dangerous complications and this burden is on the obstetrician who attends these cases. Some of the responsibility must be charged to the family as ignorance and neglect in not requesting medical aid earlier. Little need be said about the hospital treatment as she was probably hopelessly ill when admitted. The use of prostigmin might be criticized. Penicillin was not then available but it seems possible now that penicillin and sulfadiazine together with surgery on admission might have given this woman a better chance.

### Wyeth Opens Memphis Depot.

Wyeth, Incorporated, of Philadelphia, has announced the opening of a branch depot in Memphis, Tennessee, which will serve as the focal distributing point for its complete line of pharmaceutical, biological and nutritional products throughout the states of Tennessee, Arkansas, Mississippi and other

sections of the Mid-South. The new office is located in a fire-resistant, sprinkler-protected, one-story building at 480 Union Avenue, and will be operated under a franchise from Wyeth Incorporated, by Dr. Bunyan Webb of that city, who has been prominent in medical and drug circles in the Mid-South for the past twenty years.



## PUBLIC HEALTH

I. C. RIGGIN, M.D.,  
*State Health Commissioner of Virginia*

The report of the Bureau of Communicable Diseases of the State Department of Health for August, 1945, as compared with the same month in 1944, and for the period of January through August, 1945, compared with the same period in 1944, follows:

	Aug. 1945	Aug. 1944	Jan.- Aug. 1945	Jan.- Aug. 1944
Typhoid and Paratyphoid Fever	25	14	75	82
Diarrhea and Dysentery	2,080	924	4,455	4,044
Measles	23	39	1,236	17,009
Scarlet Fever	74	62	2,686	1,989
Diphtheria	22	30	166	154
Poliomyelitis	87	218	174	357
Meningitis	9	17	187	453
Undulant Fever	3	4	21	33
Rocky Mountain Spotted Fever	27	22	80	63
Tularemia	2	3	31	38

## THE PHYSICIAN AND THE NUTRITION PROGRAM

The family physician more and more is realizing his responsibility to educate his patients in personal prevention against disease. Already the doctor freely has given time and effort in public health activities directed against communicable disease, with most satisfactory results.

The problem of teaching patients to keep in better physical condition through proper living habits, in general, yet remains. One of the ways open to the physician is to stress the value of better nutritional practices. Perhaps more than any other individual, the doctor can re-educate the public in its dietary customs because of his close, confidential, and professional relationship with it.

The physician fully realizes that the presence of an infection increases the need of the body for many food elements, as well as the temporary exclusion of others. He also is much more alert than formerly to the basic cause of such infections; in some cases due to a low level of resistance which, in turn, is directly traceable to faulty nutrition.

As is well known, malnutrition often is slow and

subtle, and not easily recognized. Even the acute and chronic deficiency diseases sometimes are not readily discoverable. The average physician perhaps may be excused in a measure for not invariably recognizing the incipient forms of malnutrition, but he should be prepared to investigate its possibility.

In Virginia there may not be as many clear-cut deficiency diseases as in some other jurisdictions. For example, the percentage of pellagra cases may not be as large here as in other places; nevertheless, they exist in sufficient number to justify the doctor's careful attention. Largely a disease connected with the economic status of large groups of the population, pellagra also is found in the middle and higher economic levels, and in these cases usually is the result of poor food habits in this State.

The deficiency diseases cannot always be recognized by the eye alone. As with other conditions where a prompt diagnosis is important, the limitations of the unaided senses are apparent. Various biochemical and microbiological methods have been devised for detecting night blindness, changes in bone structure, capillary fragility, and other evidences of avitaminosis. Though the family doctor may not have available in his office all of the necessary equipment, he will likely have access to some of it through various hospitals and laboratories. Although some of the malnutrition symptoms will be detected through a simple examination of the patient, the true nutritional status will not be discovered without such additional tests.

Malnutrition can be recognized in its early stages. And it is at this point that the physician has the opportunity to apply his best remedial efforts. By so doing, the family doctor can prevent more acute conditions, readjust living habits, prevent disease and add to his patient's joy of life and health. The average physician fortunately is becoming more aware of his duty in this phase of preventive medicine.

**WOMAN'S AUXILIARY**  
to the  
**MEDICAL SOCIETY OF VIRGINIA**

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*President*.....MRS. PAUL C. PEARSON, Aylett  
*President-Elect*.....MRS. P. M. CHICHESTER, Abingdon  
*Recording Secretary*.....MRS. C. C. SMITH, Norfolk  
*Corresponding Secretary*.....MRS. HAWES CAMPBELL, Turpin  
*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond  
*Chairman, Press and Publicity*.....MRS. A. G. SHETTER,  
 Richmond.

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### Annual Meeting.

The annual meeting of the Auxiliary to the Medical Society of Virginia will be in Richmond, at the Academy of Medicine Building, Tuesday, October 16, at 11:00 a.m. Since conditions made it impossible to meet at the same time and place as the Medical Society of Virginia, there being no general meeting of that body, the Advisory Board approved the plan for the Auxiliary to hold its meeting at a different

time and place. Although this is to be a meeting for the Board members and delegates, any member interested will be welcome. All necessary business will be transacted, including the election of officers. The Board regretted that there was not time to arrange for a satisfactory program with guest speakers.

Following this business session, there will be a subscription luncheon. Owing to the difficulty in securing many food stuffs, those who wish to make reservations for the luncheon should send a card to this effect to Chairman, Auxiliary Luncheon, care Medical Society of Virginia, 1200 East Clay Street, Richmond 19, by October the 12th.

VIRGINIA PEARSON

(MRS. PAUL PEARSON)

*President.*

### BOOK ANNOUNCEMENTS

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**The Marihuana Problem in the City of New York.** Sociological, Medical, Psychological and Pharmacological Studies. By the Mayor's Committee on Marihuana. The Jacques Cattell Press, Lancaster, Pennsylvania. 1944. xii-220 pages. Cloth. Price \$2.50.

This book to which the *J.A.M.A.* (127:1129, 1945) refers to as: "—this unscientific, uncritical study—", was prepared by a group of eminent New York scientists under the general chairmanship of Dr. George B. Wallace. The study upon which this report is based was undertaken at the suggestion of Mayor LaGuardia, who, through the New York Academy of Medicine, was able to select this very competent committee. The book is essentially divided into four parts. The first is a sociological study, the second a clinical study, the third a pharmacological one, and finally a summary is given summarizing the results obtained in these several series of investigations. The conclusions are more or less in keeping with the findings of the Army Board of Inquiry, who made a similar study of the marihuana problem in the Canal Zone some years ago. The conclusion is reached that marihuana is

not a drug of addiction comparable to morphine, and that if tolerance is acquired, it is of a very limited degree. In addition, it is stated that the smoking of marihuana for a period of years led to no mental or physical deterioration. Furthermore, no direct relation was found between the commission of crimes of violence and the use of marihuana. This book should be of concern to all who are interested in this very ancient drug.

H.B.H.

**Personal Mental Hygiene.** By DOM THOMAS VERNER MOORE, O.S.B., M.D., Ph.D., Professor of Psychology and Psychiatry, Catholic University of America. Grune and Stratton. New York. 1944. 331 pages. Cloth. Price \$4.00.

The author, who is Professor of Psychology and Psychiatry at the Catholic University of America, wrote the book "in the hope of presenting various attitudes of mind, ideals and principles which may be of value to the individual confronted with the difficulties of life." These various attitudes of mind and individual reactions are illustrated not only by case histories but also by numerous references to the utterances and acts of well known historical and literary personalities, such as Baudelaire, Adolf Hitler, Joyce Kilmer, Abraham Lincoln, Cardinal Manning, John Stuart Mill, Walter Scott, Swine-

burne, and many others. Although the book has been written in an attempt to be helpful to individuals, only readers fairly well educated and at least aware of the existence of personality problems in their own life, will profit from the book. This is partly due to the intricacy of the problems discussed. But, furthermore, the author neglects too often, to explain scientific expressions and definitions absolutely necessary for the understanding of his trend of thought. Throughout the book one encounters sentences which make little sense or contain apparent mistakes, either due to typographical errors or careless revision of the manuscript. For example, one cannot assume that the author really wanted to say that adrenal cortical extract is a parasympathetic stimulant and that the dose of such extracts is measured in centimeters (p. 44). Thus, the evaluation of the more philosophical and theoretical discussions becomes rather difficult for the critical reader, because he has the feeling that the printed words do not represent always exactly the original thoughts of the author. Despite these deficiencies, the book offers stimulating reading for those interested in mental hygiene.

ERNST FISCHER.

**Alcoholics Are Sick People.** By ROBERT V. SELIGER, M.D. In Collaboration with Victoria Cranford. Edited by Harold S. Goodwin, B.A. Baltimore. Alcoholism Publications. 1945. xv-80 pages. Cloth. Price \$2.00.

The author of this little book is a psychiatrist of undoubted high professional standing and of wide clinical experience who has published a great many articles on the general subject of alcoholism. The present monograph has an introduction by Dr. Esther L. Richards, Associate Psychiatrist, Johns Hopkins Hospital and a foreword by Dr. Lawrence F. Woolley, Clinical Director of Psychiatry, Sheppard and Enoch Pratt Hospital, both nationally known psychiatrists.

Of course there has been and probably always will be great division of opinion upon the subject of the cause of excessive drinking. Several years ago the Legislature of Virginia appointed Dr. J. A. Waddell and Dr. H. B. Haag to make a report on alcoholism. They made a scientific report entitled *ALCOHOL IN MODERATION AND EXCESS* which the Legislature refused to distribute. There have been

many other recent publications on excessive drinking but it is exceedingly doubtful that any publication or organization, medical or otherwise, has solved the problem.

In the present little book there are a good many interesting suggestions and it is conveniently arranged and written so that it should help both the physician and the individual to get a better understanding of alcoholism. However, it would appear that the title makes a very broad statement which it is difficult to substantiate, especially in a brief work of this kind and which probably will not be generally accepted. It would appear that some individuals are alcoholics because they are sick people, especially when alcoholism is incidental to definite mental or physical disease. On the other hand, it would appear that there certainly must be a large class of alcoholics who drink to excess because of self-indulgence and there are records of many cases who through self-determination and will power have found out that excessive drinking was harmful and who have discontinued it through self-control, whether they consulted a physician or not. If this is true, it would appear that the title of this book is too inclusive.

B.R.T.

**Penicillin Therapy.** Including Tyrothrocine and Other Antibiotic Therapy. By JOHN A. KOLMER, M.S., M.D., Dr.P.H., Sc.D., LL.D., L.H.D., F.A.C.P., Professor of Medicine in the School of Medicine and the School of Dentistry, Temple University; Director of the Research Institute of Cutaneous Medicine; etc. D. Appleton-Century Company, New York. 1945. xv-302 pages. Cloth. Price \$5.00.

This is an excellent up-to-the-minute review on Penicillin and other antibiotics. The author discusses thoroughly the production of Penicillin, its assay, its physical and chemical properties, and its pharmacologic and toxicologic actions. The antimicrobial activity of Penicillin in vitro and in vivo is also described. Fully one-half of the book is devoted to the clinical applications of Penicillin with details being given as to its administration and to the diseases in which it is indicated. There are several tables giving interesting comparisons between the efficacy of Penicillin and the sulfonamides in a variety of diseases. The reviewer believes that this is a book which every physician intending to use Penicillin will find extremely valuable.

H.B.H.



## REPORTS FOR HOUSE OF DELEGATES MEDICAL SOCIETY OF VIRGINIA 1945 ANNUAL SESSION

### Council

There were two meetings of the Council during the past year—the regular one held February 1 and a special meeting on April 6. Minutes of these appear on pages 134 and 135 of the March 1945 MONTHLY and on pages 221 and 222 of the May issue:

### Executive Secretary-Treasurer

#### TO MEMBERS OF THE HOUSE OF DELEGATES:

The affairs of the Society are in good shape, financially and otherwise. In spite of limitations in travel, committees have shown great interest in the welfare of the Society as their reports indicate. Members who were in the various Services are beginning to return and these as well as many still retained in Service have expressed their appreciation to the Society in continuing membership without dues and in sending them the MONTHLY. Many doctors state that they have received the journal quite regularly.

Books of the Society will be audited at the end of the fiscal year (September 30) and a statement presented the Council.

The number of component societies remains the same—48 representing 91 counties and one city. Some of the societies with small memberships have not had meetings but it is hoped there may be an improvement in this with a return to normal times.

The membership, now numbering 1,992, is a net gain of 22 over the figure in 1944. Changes are as follows:

New members .....	75	
Reinstatement .....	1	
	—	76
Deaths .....	42	
Resignations .....	8	
Dropped .....	4	
	—	54
Gain over 1944 .....	22	

Appreciation is expressed for the consideration and co-operation shown by members, committees and officers at all times.

AGNES V. EDWARDS

### Delegates to the American Medical Association

There is no report at this time as the House of Delegates of the American Medical Association was forbidden by the Office of Defense Transportation from holding a meeting while the war was still in progress. However, there will be a meeting of that body December 3-6 in Chicago, and your delegates hope they may be able to attend.

J. MORRISON HUTCHESON  
WALTER B. MARTIN

### Publication and Program

The Office of Defense Transportation completely upset the work of the Publication and Program Committee. In

the first place we had no annual meeting to prepare for. This automatically took away our backlog of papers so necessary for the proper functioning of the MONTHLY. The first real shortage that we have had has been in Guest Editorials. With the stoppage of medical meetings and the comparative isolation that ensues, Guest Editors are hard to come across.

This year the Medical College of Virginia asked for the privilege of bringing out one issue of the MONTHLY, and your committee granted it.

M. PIERCE RUCKER, *Chairman*  
WYNDHAM B. BLANTON  
J. EDWIN WOOD, JR.

### Scientific Exhibits and Clinics

#### TO THE PRESIDENT AND HOUSE OF DELEGATES:

This committee has no report to make as there was no planned meeting of the Society.

We request that the appropriation of three hundred and fifty dollars (\$350.00) be again made available for our 1946 meeting.

W. AMBROSE MCGEE, *Chairman*  
M. L. DREYFUSS  
MCLEMORE BIRDSONG

### Medical Economics

Nothing has been referred to this Committee for action, during the year, so that there is no report to make.

GUY R. FISHER, *Chairman*  
N. G. WILSON  
W. L. POWELL  
A. B. GRAYBEAL  
C. L. HARSHBARGER  
H. A. LATANE

### Department of Clinical and Medical Education

Because of conditions resulting from the total war in which the country has been engaged, the Department found it impossible to conduct postgraduate clinics or courses during the current year. It was chiefly concerned with the fact that doctors returning from service with the armed forces might be interested in further training or might need some assistance in getting established or re-established in practice. Two meetings of the Department were held to consider this problem, the first on November 23, 1944, and the second on May 24, 1945.

At the November meeting, the Department instructed the Secretary to take the following action: (1) By means of a questionnaire to the recognized hospitals in Virginia, ascertain the kind and character of training that the hospitals could make available to returning doctors; (2) Ascertain by similar methods which of the larger industries in the state might be interested in employing one or more additional doctors in industrial medicine; (3)

Ascertain if possible which communities in the state were in need of one or more doctors and gather certain information about such communities that might be of interest and help to doctors desiring to locate or re-locate after the war.

The Secretary carried out the instructions of the Department in the above respects and assembled and catalogued the information desired in such form as to make it available to interested doctors.

The Secretary reported the results of his studies to the Department at its May meeting. At this time, the Department considered the facts assembled and ways and means for informing the doctors in service of what had been done and other steps that might be taken to give additional assistance to the returning doctors. After lengthy discussion, the decision was reached to employ, if possible, a doctor who had served in the armed forces who could devote part of his time to communicating with doctors in service, and especially with them as they are separated from the service, inform them of what had been done, and adopt other methods for being of assistance to them. The Department also appropriated funds for secretarial assistance, and for other necessary items.

A special committee consisting of Dr. Henry B. Mulholland, President of the Medical Society of Virginia, Dr. C. B. Bowyer, Chairman of the Department of Clinical and Medical Education, and Mr. Zehmer, Secretary of the Department, was appointed to find a doctor who could take over this program and to assist him in every practical way. This committee was able to secure the help of Andrew D. Hart, Jr., M. D., Lt. Colonel, MC, AUS, Ret. Dr. Hart has been active since July 1. One of his first acts was to prepare and send a letter to each doctor in service. He will doubtless report to the Society on his activities at some appropriate and later date.

As this report is being prepared, President Truman is announcing the fact that Japan has asked for surrender terms. In all likelihood, war will soon be over and we can return to a more normal way of life. In the year ahead, the Department will very likely desire to re-institute its program of postgraduate medical education. Already rather carefully formulated plans have been made for a state-wide program in the diagnosis and treatment of cancer. There has been discussion of a program in nutrition. In the meantime, the especially designed program to render assistance to doctors returning from the armed services will continue. In all probability, the next year will be a busy one for the Department and it anticipates the need of a fair budget for its operation. Accordingly it requests the Society for an allotment of at least \$2,400 for the new year.

GEORGE B. ZEHMER, *Secretary*  
C. B. BOWYER, *Chairman*  
I. C. RIGGIN  
J. P. GRAY  
E. P. LEHMAN  
P. ST. L. MONCURE  
H. S. DANIEL

## FINANCIAL REPORT

## DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION

September 1, 1944—August 31, 1945

	RECEIPTS	DISBURSE- MENTS
1944		
August 1—Balance on hand	\$ 86.55*	
December 22—Mrs. Brunton	-----	\$ 35.40
1945		
January 3—Medical Society of Va.	300.00	
January 18—Postmaster	-----	50.00
January 30—Mrs. Brunton	-----	22.50
March 24—Mrs. Canaday	-----	21.19
April 5—University Press	-----	19.50
June 1—Mrs. Canaday	-----	4.50
July 25—Postmaster	-----	83.70
August 20—Medical Society of Va.	136.79	
July 31—Miss Overton	-----	100.00
August 31—Miss Overton	-----	100.00
September 17—University Press	-----	45.80
September 25—Medical Society of Va.	45.80	
TOTALS	\$569.14	\$482.59
Balance on hand August 31, 1945	-----	86.55*

\*This represents a special contribution by Dr. Trout of Roanoke to be used exclusively for postgraduate medical education for Negro doctors.

## Legislation

This not being a legislative year, your committee has no formal report to make.

W. C. CAUDILL, *Chairman*  
J. W. PRESTON  
W. LOWNDES PEPLE  
FRANK S. JOHNS  
G. COLBERT TYLER  
J. MORRISON HUTCHESON  
DEAN B. COLE  
W. A. PORTER  
ALEX. F. ROBERTSON, JR.

## Membership

During the past year all new members came in through the proper channels. They are:

Dr. Solomon Adelman, Roanoke.  
Dr. Ernest Lynwood Bagby, Richlands.  
Dr. Wallace Edgar Baker, Richmond.  
Dr. John Baldwin, Washington, D. C.  
Dr. John Thomson Booth, Ashland.  
Dr. Chester Dale Bradley, Newport News.  
Dr. Sidney Elsom Bray, Norfolk.  
Dr. William Edward Bray, Jr., Charlottesville.  
Dr. Edwin Clinton Bryce, II, Richmond.  
Dr. Mary Tom Bunting, Portsmouth.  
Dr. William Walker Butzner, Jr., Fredericksburg.  
Dr. Matilda Daugherty Chalkley, Richmond.  
Dr. Peyton Moncure Chichester, Abingdon.  
Dr. James Logan Chitwood, Sylvatus.  
Dr. Louis Alfred Cibelli, Roanoke.  
Dr. Ashby Coleman, Lynchburg.  
Dr. Robert Humber Cox, Jr., Lynchburg.  
Dr. Galen Glick Craun, Richmond.  
Dr. Dexter Davis, Roanoke.  
Dr. William Cole Davis, Lexington.  
Dr. Samuel Carl DeLaura, Norfolk.

Dr. Jean B. DesRochers, Salem.  
 Dr. Hermann Diamant, Farnham.  
 Dr. Malcolm Peel Dillard, Roanoke.  
 Dr. Helen Dorsey, Hampton.  
 Dr. Henry Rolfe DuPuy, Winchester.  
 Dr. James Frederic Edmonds, Accomac.  
 Dr. Walter A. Eskridge, Richmond.  
 Dr. Edward Gill Face, Jr., Richmond.  
 Dr. Percy Ryland Fox, Richmond.  
 Dr. William M. Goldsmith, Newport News.  
 Dr. Michael Greenwald, Portsmouth.  
 Dr. John Hampton Hare, Warsaw.  
 Dr. Gerald Gunter Hirschberg, Portsmouth.  
 Dr. Robert Carhart Hood, Arlington.  
 Dr. Melvin Lawrence Horne, Newport News.  
 Dr. Lenora Brown Irwin, Charlottesville.  
 Dr. George Henry Kinser, Waynesboro.  
 Dr. Earl Homer Kirk, Richlands.  
 Dr. Herman Laibstain, Roanoke.  
 Dr. Claude Marshall Lee, Charlottesville.  
 Dr. Randolph Leigh, Jr., Charlottesville.  
 Dr. Hans Lent, Draper.  
 Dr. Homer Browning Luttrell, Delaplane.  
 Dr. Juan de Dios Ricardo Martinez-Galindo, Charlottesville.  
 Dr. Eleanor Beamer Maxwell, Williamsburg.  
 Dr. Lewis Walke McIlhany, Harpersville.  
 Dr. Julien Herman Meyer, Roanoke.  
 Dr. Verlin Estelle Miles, Arlington.  
 Dr. Dorothy Diehl Moore, Petersburg.  
 Dr. Euclid Forrest Neal, Danville.  
 Dr. Herbert Heinrich Neisser, Newport News.  
 Dr. Charles Thomas Nicholson, Jr., Alexandria.  
 Dr. Herbert Rowland Pearsall, Charlottesville.  
 Dr. Samuel Pillar, Roanoke.  
 Dr. Milton Cardwell Richards, Richmond.  
 Dr. William Callier Salley, Norfolk.  
 Dr. Maurice Santurian, Hurley.  
 Dr. Samuel Gilmore Saunders, Waynesboro.  
 Dr. Stuart Wray Selden, Kents Store.  
 Dr. Edmund Lafayette Sikes, Pound.  
 Dr. Herman Ivan Slate, Arlington.  
 Dr. Joshua Price Sutherland, Haysi.  
 Dr. John Warrick Thomas, Richmond.  
 Dr. James Arthur Thweatt, Petersburg.  
 Dr. Thomas Cabell Todd, Charlottesville.  
 Dr. Elmar Stebbins Waring, Fairfax.  
 Dr. Nancy Safford Whitticar, Fredericksburg.  
 Dr. John Stuart Williams, Hopewell.  
 Dr. Forney Drew Winner, Norton.  
 Dr. Patrick Henry Winston, Clarksville.  
 Dr. William Hart Woodson, Newport News.  
 Dr. John Alexander Wright, Jr., Doswell.  
 Dr. Hyman Samuel Zfass, Richmond.  
 Dr. Paul A. Zwick, Marion.

Notices of deaths of members, as far as they have been received, have been published in various issues of the MONTHLY. As there is to be no open session of the Society before which they may be presented, they are listed below:

Dr. Osbourne Orlando Ashworth, Richmond, July 5, 1945.  
 Dr. James Reginald Bailey, Keysville, September 15, 1944.  
 Dr. Aubry Cheatham Belcher, Richmond, February 18, 1945.  
 Dr. Mackall R. Bruin, Los Angeles, Calif., March 10, 1945.  
 Dr. Brown H. Carpenter (Major M.C.), Danville, October 5, 1944.  
 Dr. Charles Edward Conrad, Harrisonburg, November 1, 1944.  
 Dr. Oscar Bruton Darden, Richmond, December 10, 1944.  
 Dr. Thomas Latane Driscoll, Columbia, May 30, 1945.  
 Dr. George Craig Eggleston, Amelia, June 14, 1945.

Dr. John Edward Fissel, Jr. (Capt. M.C.), Newport News, September, 1944.  
 Dr. Benjamin Roscoe Gary, Newport News, February 11, 1945.  
 Dr. Edward Thomas Glover, Portsmouth, January 11, 1945.  
 Dr. Mathias Grove-Hagen, Richmond, April 2, 1945.  
 Dr. William Dandridge Haden, Charlottesville, April 8, 1945.  
 Dr. Samuel Edward Hughes, Danville, April 9, 1945.  
 Dr. Joseph Frasia Jones, Richmond, March 11, 1945.  
 Dr. Robert DuVal Jones, Norfolk, September 3, 1945.  
 Dr. William Percy Jones, Urbanna, January 22, 1945.  
 Dr. William James Knight, Newport News, November 15, 1944.  
 Dr. William Hayes McCarty, Marion, January 26, 1945.  
 Dr. John Cameron McCluer, Jr., Alexandria, June 26, 1945.  
 Dr. William Read Martin, Charlotte C. H., June 24, 1945.  
 Dr. Emmett Wood Meade, Castlewood, July 28, 1945.  
 Dr. Michael W. Minor, Comorn, January 31, 1945.  
 Dr. Robert J. Payne, Stafford, December 9, 1944.  
 Dr. Benjamin Ashby Pope, Newsoms, April 18, 1945.  
 Dr. Thomas Garrett Pretlow, Chester, July 8, 1945.  
 Dr. Charles Walton Purcell (Capt. M.C.), Danville, November 11, 1944.  
 Dr. James Henry Rawlings, Lynchburg, April 3, 1945.  
 Dr. Edward Wilson Rawls, Portsmouth, September 6, 1945.  
 Dr. Samuel Addison Reynolds, Vashti, July 8, 1945.  
 Dr. Louis Garrard Roberts, White Hall, October 26, 1944.  
 Dr. Frederick William Shaw, Richmond, May 29, 1945.  
 Dr. John William Smith, Branchville, February 25, 1945.  
 Dr. George Hume Steuart, Ottoman, January 6, 1945.  
 Dr. David B. Stuart (Major M.C.), Roanoke, April 14, 1945.  
 Dr. Robert John Styers, Amelia, July 24, 1945.  
 Dr. William Bibb Thornhill, Lynchburg, April 3, 1945.  
 Dr. Beverley Randolph Tucker, Richmond, June 19, 1945.  
 Dr. Herman Luther Tutwiler, Patterson, July 29, 1944.  
 Dr. James Alexander Waddell, Charlottesville, June 8, 1945.  
 Dr. Robert Edward Whitehead, Norfolk, July 2, 1945.

It is with pleasure that your Committee recommends to the Society for honorary membership the name of our retiring President, Dr. H. B. Mulholland.

J. BOLLING JONES

J. F. THAXTON

A. M. SHOWALTER, *Chairman*

### Ethics

There were only two matters to come before the Ethics Committee during the year. Both were of minor importance and were dispensed with satisfactorily. One, a complaint, was found to be without justification. The other, a request for information, was satisfactorily answered by the whole committee. Complete records of both are on file with the society and the committee.

JAMES L. HAMNER, *Chairman*

R. L. RAIFORD

H. W. BACHMAN

### Judicial

At the suggestion of the President, your Committee has considered the following changes in the By-Laws. \*The proposed amendments are unanimous with the exception of the one with reference to Article IV, Section 2, relative to the time when the President-Elect shall make his



annual address. In order that the House of Delegates may have an opportunity to consider the proposed change, this amendment also is submitted for discussion and decision.

The proposed amendments have in mind the following changes in the By-Laws (substitute or amendment is in italics):

#### ARTICLE IV—GENERAL MEETINGS

##### SECTION 2

(Present form) At each annual meeting there shall be an address by the President and by two or more invited guests.

(Substitute) *At each annual meeting the President-Elect shall be inducted into office at the opening session, and shall deliver the presidential address at this time. One or more invited guests will also address the Society.*

#### ARTICLE VI—ELECTION OF OFFICERS

##### SECTION 3

*Omit sentence*—No member of the Society who lives in the city or county in which the Society is holding its session shall be eligible to election to the office of President-Elect for the succeeding year. This paragraph should then read:

*Section 3—The House of Delegates shall at each annual session elect a President-Elect for a term of one year. At the end of this term, the President-Elect shall automatically become President for a term of one year.*

#### ARTICLE VIII—COUNCIL

##### SECTION 1

The amendment suggested provides that the immediate past President shall become a member of the Council for the year following his term of office as President, so that the first sentence should read:

Section 1—The Council shall consist of the President, President-Elect, First Vice-President, *the immediate past President*, and one member from each Congressional District. (Remainder of section unchanged.)

If this is adopted, it will necessitate a change in the last line of Article VI of the Constitution, so that it should read: President, President-Elect, *First Vice-President, and immediate past President.*

J. MORRISON HUTCHESON

JOHN O. BOYD

P. S. SMITH, *Chairman*

#### Public Relations and Medical Service

The extensive developments in world affairs have been so pronounced that it is difficult to get a stabilized view of the influences which these changes are having upon the medical profession. For the past few years, the major interest in the country has been directed towards the successful prosecution of the War. Now that victory has been won, it is very likely that further and vigorous efforts will be directed towards objectives that will probably influence the practice of medicine in our country.

There are pending in Congress now two bills which have been introduced and which, if enacted into law, will prove a tremendous concern to our profession. The Hill-

Burton Bill is largely concerned with hospital and health center construction. This bill was submitted to various orthodox medical organizations, such as the Council of the American Medical Association and the American Hospital Association, and it has gained general approval of the medical profession. More recently the new Wagner-Murray-Dingell bill was introduced. This new 1945 edition of the Wagner-Murray-Dingell proposal has apparently all of the objections which were present in the original bill introduced by these gentlemen. It would take over all the prerogatives of the Hill-Burton bill and make of it a ten-year program at ten times the cost of the Hill-Burton bill. This new bill seems just as arbitrary, fully as dangerous, and far more expensive than the bill as originally introduced. We do not believe that this bill would be acceptable in any way to the membership of the Medical Society of Virginia, either as physicians whom it would regiment or as citizens whom it might bankrupt. The new Wagner-Murray-Dingell bill has never been submitted to the American Medical Association for its approval.

During the last meeting of our State Legislature a Commission to study rural medical facilities was appointed and asked to submit a plan to the coming Legislature for the correction of our inadequate medical and hospital facilities for our rural population. All of the members of the Committee on Public Relations and Medical Service, created by the Medical Society of Virginia, were appointed on this Commission. We have had numerous meetings to study this problem and several public hearings have been held. The Commission has finished its report and it will be submitted in due time to the Legislative Council for approval and transmission to the Governor and the Legislature.

The studies of this Commission have confirmed the impression already established in many other states: first, that there is an inadequate number of doctors available to take care of all groups of our citizens in this State; second, there is a faulty distribution of doctors and medical facilities with the result that many of our rural people and a smaller number of our urban population do not have adequate medical care; third, when medical care can be procured in certain rural communities, the price of this attention is prohibitive for people in the low income bracket group. This expensive medical attention is occasioned by the scarcity of doctors in the rural districts and the necessary travel which this attention incurs.

The Commission has suggested plans which we believe, if accepted by the Legislature and enacted into law, will at least offer a partial remedy of many of these problems. The expense incident to the complete correction of these difficulties will be material. It has been felt by the Commission that the solution should be approached in a gradual manner by establishing certain trial efforts to prove the wisdom of the proposals.

We recognized even before the period of World War No. 2 that there was an inadequate distribution of medical care over our State and from surveys which have

been made of doctors who are in the service, there is every reason to feel that this inadequacy will be increased unless immediate steps are taken to encourage doctors to locate in rural districts and small communities.

J. M. EMMETT, *Chairman*

H. B. MULHOLLAND

I. C. RIGGIN

### Maternal Health

The activity of this committee has been limited during this year on account of several conditions related to the war. One meeting was held February 15, 1945, at the Academy of Medicine, Richmond. Reports were distributed showing:

Total births (1944) .....	65,000
Births attended by midwives .....	11,500
Births attended by physicians .....	54,000
Births in hospitals .....	33,000
Maternal death rate per 1,000 live births .....	2.8
Deaths from puerperal sepsis .....	57
Deaths from toxemia .....	41
Deaths from hemorrhage .....	23

It is gratifying to note that the death rate, 7-2/10 per 1,000 live births in 1930 has been reduced to 2-8/10 in 1944, the lowest recorded in this State, but it is still too high. The decrease, however, was only one-tenth under that of the previous year. One of the outstanding undertakings of this committee has been the study of 606 maternal death records. The story of this has been told in previous reports. The collection of these case reports started in December, 1939, and continued to May, 1941, inclusive. The reports were then discontinued on account of the decreased personnel available due to the war. However, the study of this material and the use of the information obtained has continued. It was noted that 224 of this total number considered by the committee were believed by them to have had incorrect treatment. Three hundred and eighty-seven had no prenatal care. A further study is now being conducted to determine more accurately, if possible, the number of these cases which are considered to be preventable and if so, how. One of these case reports is prepared by this committee and published in the VIRGINIA MEDICAL MONTHLY each month. Reports which we have received indicate that these case records are widely read by the doctors in the state with much interest and profit. We are told that they have furnished a factual basis for the teaching of obstetrics in our medical schools or at least as an aid to this end. A number of individual papers have been prepared from a study of these records and as these facts are further studied and developed other truths may be uncovered.

The Prenatal Clinic established by the Bureau of Maternal and Child Health of the State Department of Health this committee has found to be most valuable although recently limited in its activity by prevailing conditions. Continued operation of these clinics focused attention upon the urgent need of some method whereby indigent patients attending these clinics could be hospitalized when such procedures were considered impera-

tive. Such a plan was organized and placed into operation largely through the efforts of Doctor A. L. Carson, a member of this committee and of the Virginia Department of Health. It has been in operation since 1940 and now more than one thousand obstetric patients and over six hundred infants have been cared for through this plan. Fifty-one hospitals are now participating.

A description of this plan has already been published in the Editorial department of the MONTHLY, April, 1945. It is not unreasonable to believe that these activities may have contributed to the reduced mortality rates in the state and will continue to do so if the wartime restrictions relax.

C. J. ANDREWS, *Chairman*

A. L. CARSON

W. R. PAYNE

F. O. PLUNKETT

J. M. NOKES

J. M. WHITFIELD

G. N. CARTER

D. S. DIVERS

M. P. RUCKER

### Child Welfare

Due to conditions beyond our control, we have been unable to have a meeting of the Child Welfare Committee and therefore have no report.

P. W. MILES, *Chairman*

R. H. DuBOSE

EMILY GARDNER

R. B. HIGHTOWER

MARY E. JOHNSTON

E. C. HARPER

W. T. GRAHAM

### Walter Reed Commission

After some years without major repairs, Belroi, the birthplace of Walter Reed, is now in need of paint and some repair work. For this reason, it is recommended that \$50.00 be allowed in addition to the amount in the budget for the past year, a total of \$125.00 or as much thereof as needed. As in the past, this appropriation will cover renewal of fire insurance and upkeep of the grounds.

C. P. JONES, *Chairman*

J. D. CLEMENTS

JAMES W. SMITH

### To Confer with State Board of Nurse Examiners

There is no report of the Committee to Confer with State Board of Nurse Examiners as the committee has not been called upon.

I. A. BIGGER, *Chairman*

C. B. MORTON

D. S. DIVERS

A. P. JONES

D. G. CHAPMAN

RUSSELL BUXTON

### Mental Hygiene

On Wednesday, September 5, 1945, the Mental Hygiene Committee of the Medical Society of Virginia met at the University Hospital. Chairman, Dr. David C. Wilson, presided. Members present were Dr. Frank H. Redwood, Dr. Charles F. Graham, and Dr. Joseph E. Barrett. The Committee reviewed the progress in prevention, diagnosis and treatment of personality disorders which had taken place in Virginia during the last few years, and decided to make the following report:

*The work of the State Hospital Board was reviewed.* It was felt that the entire state hospital organization should be commended for its loyal and patriotic work in spite of great handicaps. The Committee decided that three projects of the Hospital Board should have the endorsement of the Society. *First*—the plan to establish mental hygiene clinics in different towns of the state. These clinics have already been established in southwest Virginia, in Danville, and in Newport News. It is the plan of the State Hospital Board to establish travelling clinics under the supervision of a capable director, and judging from the success of those already established, it is felt that this plan should receive full support. *Second*—the State Hospital Board has asked that ample funds be given by the state to construct a modern mental hospital near Williamsburg and another one near Staunton, the first to take the place of the old hospital known as Eastern State, and the second to take the place of Western State Hospital. The Committee felt this project should be commended, and that the members of the Society should urge their representatives in the Assembly to see that ample funds be given so that these hospitals could be so constructed that they would be abreast of the times for many years to come. *Third*—the plan to move the colony which is now near the state hospital in Petersburg to a more suitable location should also be fostered. The present site is apparently inadequate for an enlarged colony and enlargement is necessary. A colony with 2,500 beds would help a great deal in the handling of negro delinquents throughout the state.

*The teaching of psychiatry was next discussed.* It was felt that the two medical schools of the state had made excellent progress during the last three or four years. The ill effects of the accelerated program on teaching were lamented. It was urged by the Committee that the State Society suggest to the Medical Schools that more emphasis be placed on the teaching of the milder forms of personality disorders so that the physician of the future should be prepared to take care of the great number of psychiatric ills which he encounters regardless of his type of work. The psychiatric wards at the Medical College of Virginia and the University Hospital have become very popular and their beds are in great demand. It is felt that these beds should be used for the study and demonstration of early cases, and that the more severe and chronic cases be referred to the state hospitals.

*The effects of the war on the mental hygiene of the state was next considered.* It was concluded that the Committee should inform the State Society first that the

war had caused a great increase in mental disease among the young wives and the mothers of the state, that these individuals, grossly upset by the war, most frequently refuse to admit this cause for their disability but lay emphasis on a physical complaint. The ending of the war should put an end to a great number of these abnormal conditions, but certainly the increase in illness from this cause should be expected for several months.

Next, it has been noted throughout the country that the returning soldier has a great deal of difficulty in fitting himself into civilian life. This is especially difficult for those men that have become psychiatric casualties. It is felt by this committee that special clinics throughout the state should be established to take care of these individuals. These should be sponsored by the state and the community, as well as by the Veterans Bureau. The outstanding presenting symptom of the returnee is hostility which may be focalized on one individual or one group of individuals, or may be just a generalized form of resentment. This hostility may lead to major behavior problems if not assuaged. The members of the medical profession are urged to recognize this attitude and to treat it with sympathetic understanding.

Next, *the Committee considered the dearth of mental hygiene instruction in the schools.* As all minor and major personality disorders have their beginnings in the early years of childhood, any form of successful prevention must begin in the grammar grades. It is, therefore, urged that more space in the textbooks be given to mental hygiene, and that courses be instituted which will instruct students along this line. Certain courses have been established in other states which have been quite successful, and it is urged that the Department of Education investigate these plans and institute similar education.

*The establishment of a Psychiatric Institute in the state has been proposed,* and a bill has been passed legalizing the construction of such an institute as soon as funds are available. The Committee feels that this is a splendid project, and one that should be supported by the Society. A necessity of any state hospital system is the presence of a well trained staff. The state hospital system in Virginia can never be first class until the position of staff physician at the state hospitals becomes sought after. To make this so, it is necessary that these staff physicians be paid adequately, and that they have an opportunity for post-graduate training. This is the purpose of the Psychiatric Institute.

During the last few years, *there has been an attempt to establish a new specialty known as psychosomatic medicine.* It is felt by the Committee that this term gives a false impression, that psychosomatic medicine is really a form of psychiatry, and that it should be emphasized that those physicians who wish to practice this so-called specialty do not need some new type of training, but are in need of further grounding in long established principles and practices of psychiatry.

*The psychologists of the state, after a good deal of consideration, have asked for a change in sections 1079*



and 1079.A of the Code of Virginia providing for the certification of "Approved Mental Examiners". The standard set for this certification by this committee seems to the Mental Hygiene Committee of the State Society to be quite adequate and to denote a step in the right direction. This recommendation of the psychologists has been referred to a committee appointed by the Commissioner of Mental Hygiene. Our committee would like to notify the Society of this advance which is now in progress, and to recommend that the Society support a change in the law and the proper certification of all psychologists that are in contact with clinical work.

In summary, the Committee wishes to present the following projects to the State Society and to recommend that they endorse and support them to the fullest:

- 1) The clinics to be established by the State Hospital Board.
- 2) The two new state hospitals.
- 3) The increase in remunerations of the staff physicians in the state hospitals.
- 4) An increase in the number of years given to the teaching of psychiatry in the Medical Schools of the state, that more emphasis be placed on the diagnosis and treatment of the beginning mental disorders, and especially those that are found in connection with medical and surgical diseases. It is recommended for this reason that the doctors of the state make every effort to send early cases to the psychiatric wards of the medical schools, while referring the more chronic and severe cases to the state hospitals.
- 5) The establishment of Rehabilitation Clinics for veterans throughout the state either by means of state or community subsidy, and that where such clinics cannot be established that the doctors of the Society inform themselves regarding the personality disorders of the returnees and be prepared to handle their problems.
- 6) The teaching of a definite course of mental hygiene is recommended for the grammar schools and high schools of the state.
- 7) A Psychiatric Institute for post-graduate training in psychiatry has already been authorized by the legislature, and so the Society is asked to urged its immediate establishment.
- 8) The advances in psychiatry now make it essential for the physicians of the state to be more aware of the psychiatric problems of their patients, and it is urged that physicians review the fundamentals of this specialty so as to be able to meet the needs of so-called psychosomatic medicine.
- 9) The certification of psychologists who are engaged in work with the sick according to the plans outlined by the Committee of Psychologists.

D. C. WILSON, *Chairman*  
CHAS. F. GRAHAM  
FINLEY GAYLE  
J. E. BARRETT  
F. H. REDWOOD

## Tuberculosis

The entire tuberculosis program in Virginia has been reviewed and the results for the past year have been analyzed. In spite of the many handicaps experienced, it seems the year, as a whole, was a very successful one. The tuberculosis death rate in the State showed a substantial decline, something we consider unusual during a war period. Routine x-ray examination of the chest of young men for military duty at the Army Induction Centers has continued to discover a number of early cases of tuberculosis, and in most instances, where it was necessary, provisions have been made for treatment. Receipts from the Seal Sale Campaign, as conducted by the Virginia Tuberculosis Association and its allied divisions, have continued to grow. Many Tuberculosis organizations, which in peace time function at a high rate of efficiency, have found it more difficult to operate, and due to shortage of personnel, transportation difficulties, etc., have had to restrict their activities. It is believed, however, that in spite of these handicaps, good work in the fight against this disease has continued at a commendable rate.

## DEATH RATE

During the calendar year 1944, there was in the State of Virginia a total of 1,287 deaths from all forms of tuberculosis, both white and colored (figures obtained from the Bureau of Vital Statistics July 20, 1945); this broken down into the two races revealed 626 in white and 661 in the colored. When we compare this with the 1943 death rate, we find there was a reduction of 110 deaths, or 7.8 per cent—30 less white and 80 less colored. Some of the states in the Union have shown a material increase, and it is indeed gratifying to know that Virginia can continue to show a decline in the face of the various hardships experienced incident to war.

## BEDS FOR TREATMENT

The total number of beds in the State for the treatment of tuberculosis has remained essentially the same, and is as follows:

	WHITE	COLORED	TOTAL
State -----	770	269	1,039
Municipal -----	393	192	585
Total -----	1,163	461	1,624

Due to restrictions brought about by the war, the building program for increased bed capacity has had to be curtailed.

## COLLAPSE THERAPY IN THE FIELD

This service has continued, but has had to be curtailed some on account of some of the physicians operating the pneumothorax stations having entered military service, and they have not been replaced by men qualified to administer these treatments. This service is an important part of the Tuberculosis Program, and it is hoped that as soon as possible after the termination of the war this work can be resumed and increased as the occasion re-

quires. At present there are 54 pneumothorax stations in operation, and during the past year (July 1, 1944, to June 30, 1945) 638 patients received 10,263 refills at these stations.

#### TUBERCULOSIS OUT-PATIENT SERVICE

A total of 97 Chest Clinics were held during the year throughout the State. The two x-ray units operated almost continuously, and the work done by these was as follows:

TOTAL NUMBER X-RAYS ----- 11,163

Adults	White -----	4,982	}	7,146
	Colored -----	2,164		
Children	White -----	2,398	}	4,017
	Colored -----	1,610		

#### RESULTS:

<i>Positive:</i>				
Adults	White -----	1,418	}	2,303
	Colored -----	459		
Children	White -----	227	}	
	Colored -----	199		

<i>Suspicious:</i>				
Adults	White -----	239	}	574
	Colored -----	113		
Children	White -----	144	}	
	Colored -----	78		

<i>Negative:</i>				
Adults	White -----	3,325	}	8,286
	Colored -----	1,592		
Children	White -----	2,027	}	
	Colored -----	1,342		

#### Sanatorium Treatment Recommended:

White -----	313	}	474
Colored -----	161		

In addition to these Clinics, the State Department of Health conducted Industrial Hygiene Surveys. Two x-ray machines were in use in 107 industries, and in many instances small companies came to the neighboring larger plants for their x-rays. Through this channel 124,209 were x-rayed, and this revealed .091 per cent of reinfection type of tuberculosis. Many of these cases were in need of treatment, and are now in institutions. This survey also revealed many other conditions, such as heart or vascular changes, lung tumors, slight healed primary tuberculous infections, bony abnormalities, etc., and these, along with the reinfection form of tuberculosis discovered, brings the total pathological findings up to about 5 per cent.

The Virginia State Department of Health has considered its Clinic Survey program inadequate, and this is being revised on a more elaborate basis for the present fiscal year (July 1, 1945, to June 30, 1946). This work has been made possible largely through a Federal Appropriation provided through the Tuberculosis Control Division of the U. S. Public Health Service, and all funds will be used to improve and expand present tuberculosis control facilities. With the new equipment thus made available, and additional personnel, a program has been

planned which will include not only many of the rural sections heretofore not covered, but ten of the principal cities of the State.

The Virginia Tuberculosis Association has, during the past year, conducted some X-ray Survey Clinics in certain areas of the State in which 59,898 patients were x-rayed. Interpretation of these films revealed the following:

- 247 cases of active, or reinfection tuberculosis.
- 173 cases of healed, reinfection tuberculosis
- 207 cases of active primary tuberculosis.
- 5,746 cases of healed primary tuberculosis
- 391 "suspicious" cases
- 862 cases found to have other chest abnormalities, non-tuberculous in character.

This service conducted by the Virginia Tuberculosis Association included people in all walks of life—school teachers, pupils, college students, industrial workers, food handlers, etc.

Dr. Vincent W. Archer, Roentgenologist at the University of Virginia Hospital, has recently ordered a 70 mm. X-ray Machine, and he expects to take free chest films of all patients on which it is ordered, who come to the Hospital or Clinic. This is intended to be a screening process, and all films, positive or suggestive, will be re-taken for confirmation on the conventional 14 x 17 film at the usual charge.

This is an excellent procedure, and will no doubt be the means of discovering many early cases of tuberculosis that might otherwise escape detection until a more advanced stage had been reached.

It is hoped more hospitals in the State will adopt a similar plan.

As far as we know, in the history of the State, there has never been such case finding survey work done, and the indications are this is going to continue at what we hope to be an accelerated rate for the next few years.

#### INSTITUTIONAL TREATMENT:

At the last meeting of the House of Delegates (October, 1944), the question of not being able to get ill patients with tuberculosis into the Sanatoria was discussed, and referred to this Committee for study and report.

The matter has been gone into somewhat at length, and it has been found from this survey that the three institutions—Catawba, Blue Ridge and Piedmont, have passed through the most trying period of their existence, but not unlike, in many respects that experienced by many of the general hospitals in the State. Their problems have been largely of labor shortage, though the types of buildings in which they have attempted to treat cases have played a part. Restricted wage scale has been responsible for many employees leaving the institution to seek more remunerative work elsewhere; some have volunteered for military duty, some were inducted, while others have left due to general unrest which is usually prevalent throughout the country in wartime. To replace in large numbers trained personnel is not an easy task, particularly during a period of war. It requires months

to train a cook or baker so that he will satisfactorily serve an institution treating patients with tuberculosis. It is a well known fact that if the best results are to be gotten, it is necessary to have good appetizing food prepared, and served the patients in an attractive manner. Trained orderlies have left and have had to be replaced by cripples and old men broken down in health with no previous experience in hospital work. The culinary department has been greatly handicapped by the limited number of employees. The most acute shortage has been experienced in staff members. Less than half the usual number of physicians have been available, and the real shortage has been in nurses and nurses aides. On several occasions ambulatory patients in the institutions have volunteered their services in order that ill patients might get the necessary attention. Many ex-patients have been employed to help with the nursing, many of whom were able to work only part-time. An appeal was made to the Red Cross for Nurses Aides, but this was denied on the grounds that aides were not permitted to nurse communicable diseases. Also volunteer civilian nurses aides have not been available due mostly to the rural location of the institutions.

All three of the Sanatoria have kept a long waiting list for infirmary patients throughout the war period, and much pressure has been brought to bear on them to admit these cases so urgently in need of treatment. Acutely ill cases require much nursing care, and it is obviously not the part of wisdom to assume an obligation like this with little or no hope of providing proper nursing and medical care. Patients who were able to go to the main dining room for their meals have usually been admitted promptly. A larger group of patients of this kind can be treated with a limited staff and shorter culinary force than those who are in need of bed care, particularly when the cafeteria system of serving patients can be used.

It has been most difficult to get infirmary patients for whom nothing further could be done, or on whom thoracic surgery had been completed, to leave in order to make room for others who had not had an opportunity for sanatorium treatment and training, the most constant excuse on the part of families being there was no one at home to care for them. It can be easily seen if an institution is allowed to have its infirmary, with limited capacity, filled with hopeless cases stay indefinitely, others would not have a chance to come in for treatment.

The type of some of the buildings at the three institutions has been a handicap. They are mostly structures that were erected in the early days of the Sanatoria, and were equipped for ambulatory cases. The modern treatment with collapse therapy, requires more the hospital type of building where patients can be given more bed rest, and arranged so that the management can service them better and more economically. All of the more recent buildings are of this type, and future buildings will likewise be this kind with facilities available for ill patients, and for collapse therapy to be promptly administered when necessary.

An extensive building program is now being planned

at the three institutions which will increase their capacity (materially so at Piedmont), and will give more than half of the beds of the infirmary or hospital type. Piedmont will have practically all of its buildings arranged and equipped for caring for bed cases if it is found necessary to do so.

The following table shows the location (infirmary or pavilion) and number of beds at the three Sanatoria, the number and type of vacancies available, and the length of the waiting lists as of July 25, 1945.

SANATORIUM	No. BEDS			VACANCIES			WAITING LIST		
	Inf.	Pav.	Total	Inf.	Pav.	Total	Inf.	Pav.	Total
Catawba	134	266	400	0	81	81	54	0	54
Blue Ridge	137	233	370	5	63	68	60	0	60
Piedmont	172	97	269	0	20	20	126	0	126
Total	443	596	1,039	5	164	169	240	0	240*

\*NOTE: This does not include 86 expatients on the infirmary waiting lists.

To summarize this report, it may be said there is an acute labor shortage in the Sanatorium, as is the case most every place, and this with the restricted salaries and wages is largely responsible for the delay in admission of and limited number of cases treated. This is illustrated by the fact that at the time this survey was made, the three institutions had only a total of 103 persons in the nursing personnel (graduates, pupils and nurses aides), or 56 per cent of a normal quota of 184 during peace time. Also the limited facilities for treating bed cases has been a factor. There are at present, at the three places, too many beds located on pavilions which are unsuitable for treating ill patients, chiefly the type now applying for admission. The authorities are fully aware of this condition, and are now trying to correct it by replacing these old demoded structures with modern fireproof buildings suitable for treating either ambulatory or bed cases, according to the demand.

It seems to me too many patients with tuberculosis, in need of treatment, are being influenced by the high wages of industry to continue working until their disease is advanced and they are in need of infirmary treatment. Prior to the war the number of ambulatory patients applying for treatment was much larger than it is today.

It is believed by the majority of this Committee that the Sanatoria have done their best, under existing conditions, in trying to care for ill tuberculous patients throughout the State. Most of the obstacles mentioned here will be removed with the termination of war, or soon thereafter, and this should enable the institutions to offer better treatment and more prompt admission to those in need of it, irrespective of whether they are in need of bed care or can be ambulatory.

Respectfully submitted

CHAS. W. SCOTT

C. L. HARRELL

FRANK B. STAFFORD, *Chairman*



### Nutrition

Plans made last year to work with the Department of Clinical and Medical Education in putting on Nutrition Symposia and Clinics were deferred because of war conditions. It is hoped that some of this nutrition educational work may be resumed in the coming year.

It is requested that all physicians lend their support to the bill to be presented in the next General Assembly requiring the continuance of the enrichment of white flour and bread. The resolution passed by the Council April 6, 1945, is as follows:

"WHEREAS it is necessary and advisable to protect so far as may be possible the health of the people of this State against deficiency of certain ingredients in foods necessary to health and well-being of the people, and

"WHEREAS, the compulsory enrichment of flour and bread, required by the War Food Administration, terminates with the resolution of the wartime powers of the Administration,

"THEREFORE, BE IT RESOLVED that the Medical Society of Virginia, through its Council, respectfully requests that legislation be adopted requiring a continuance of the enrichment of these necessary foods."

RAYMOND KIMBROUGH, *Chairman*

J. P. GRAY

W. W. WADDELL, JR.

E. A. HARPER

A. L. CARSON

N. F. RODMAN

### Syphilis Control

The Syphilis Control Committee of the Medical Society of Virginia met at the Hampton Roads Medical Center, Norfolk, Va., on March 23, 1945, at 9:30 a.m. The entire membership of the committee, Dr. W. W. S. Butler, *Chairman*, Dr. D. C. Smith, Dr. J. W. Love, Dr. R. W. Fowlkes, Dr. J. R. Blalock, Dr. W. E. Baker, and Dr. David S. Garner was present. At the request of the committee, Dr. Raymond Kimbrough and Dr. Earl White, Surgeon, U. S. Public Health Service, were also in attendance.

Dr. Earl White, Medical Officer in Charge of the Hampton Roads Medical Center (rapid treatment center for the treatment of venereal diseases), presented to the committee a detailed report of the activities of the Center since the date of its opening, June 15, 1945. The methods of massive arsenotherapy, penicillin therapy and combined therapy with arsenicals, bismuth and penicillin as used in the treatment of early syphilis, as well as use of penicillin in the treatment of gonorrhea, were discussed. The committee inspected the physical facilities of the Center and discussed methods and techniques of patient management. At the conclusion of this portion of the meeting the following resolution was unanimously adopted:

"The Syphilis Control Committee of the Medical Society of Virginia endorses and recommends the continued use by the State Health Department of the Richmond Municipal Hospital and the Hampton Roads Medical Center, the two rapid treatment centers in Virginia, as now operated. The committee approves and endorses the policies and procedures established by the State Health

Department for the use of these centers by the local health departments in Virginia."

The committee next discussed the problem of adequate diagnosis, management and treatment of central nervous system syphilis in Virginia. After consideration of the various phases of this problem, the Syphilis Control Committee passed unanimously a resolution that the request embodied in the following letter be forwarded to Dr. H. B. Mulholland, President of the Medical Society of Virginia, for consideration by the Executive Council of the Medical Society of Virginia:

"At the meeting of the Syphilis Control Committee of the Medical Society of Virginia held in Norfolk at the venereal disease rapid treatment center (Hampton Roads Medical Center) on March 23, 1945, we learned that, in the 1,400 cases of early infectious and potentially infectious cases of syphilis treated there in the past nine months, approximately thirty per cent had syphilis of the central nervous system (asymptomatic). This fact plus the large number of positive spinal fluids found during the selective service examinations throughout the State, plus special requirements needed for the proper treatment of early and asymptomatic central nervous system syphilis, plus the need for this treatment to prevent the disasters of late and untreated central nervous system syphilis indicates that there is an imperative need for the study of possible ways to use the present facilities operating in the State for the treatment of these cases and an investigation of the need for new facilities or the increased utilization of the present facilities.

"After considering the importance of this problem and its relation to the several established organizations in the State, the Syphilis Control Committee passed unanimously a resolution that the following request be made:

"It is respectfully requested and recommended that the Council of the Medical Society of Virginia provide for the appointment of a special committee to study and make recommendations with regard to the following:

1. The extent and nature of the problem of central nervous system syphilis in Virginia.
2. The need for hospitalizing these cases to provide adequate therapy.
3. The possibilities of extending the use of facilities already established in the State for the treatment of central nervous system syphilis.
4. The need for additional treatment facilities.
5. If additional facilities are needed, how they can best be provided.

"It is respectfully suggested that this committee include representation from the Medical Society of Virginia, the State Health Department, the Department of Syphilology of the two medical schools, and the State Department of Mental Hygiene and hospitals. The urgency of the problem recommends that the earliest possible action be taken in this regard." (This was presented to the Council at its meeting on April 6 and

was referred back to this Committee, with authority for the chairman to appoint any additional members he may wish to cooperate with them.)

Dr. D. C. Smith and Dr. Raymond Kimbrough, who were requested by the Chairman of the Syphilis Control Committee last year to study and recommend revisions in the treatment schedules approved by this committee in the past for use in the clinics operated by the local health departments, reported that due to the advent of penicillin it had been deemed wise to delay revisions in the treatment schedules. At the request of the Syphilis Control Committee, Drs. Smith and Kimbrough agreed to continue the study of the treatment schedules now in use and recommend such changes as are deemed necessary in the near future.

A list of drugs to be distributed by the State Health Department for the treatment of venereal diseases was reviewed and approved.

With the advent of penicillin it has become apparent that the entire field of syphilotherapy will need to be re-evaluated. In this connection the committee unanimously approved three measures. (1) They requested Dr. D. C. Smith to review the present status of penicillin in syphilotherapy and find or prepare an article or articles that could be published to advise physicians throughout the State concerning the use of this new drug in the treatment of syphilis. (2) The committee endorses the distribution of penicillin by the Virginia Department of Health for the treatment of infectious venereal diseases in clinics and public institutions. (3) The committee recommends that the rapid treatment center facilities (Richmond Municipal Hospital and Hampton Roads Medical Center) be used in offering to the physicians throughout the State the opportunity for a short orientation course in the advances in the diagnosis, management and treatment of the venereal diseases. It was further recommended that this course be offered first to those physicians serving as clinicians in the various venereal disease clinics operated by the local health departments in the State as a trial project and then be made available to all physicians interested. Plans for this project are being formulated so that it may start sometime in the early fall.

The committee unanimously approved the continuation of its agreement to act as consultants in the program conducted by the Richmond Municipal Hospital and the Hampton Roads Medical Center and the State venereal disease control program.

W. W. S. BUTLER, *Chairman*.

### Cancer

The Cancer Committee has reviewed the work of the certificated clinics since its last report, and has made suggestions for improvement and standardization of records.

The Cancer Committee has unanimously approved the following regulations to guide the Virginia Cancer Foundation in the expenditure of its funds for the care of medically indigent patients in the terminal stage of cancer. *Regulations for Care of Advanced Cancer Patients at the*

### *Expense of the Virginia Cancer Foundation*

(1) The care of advanced cancer cases must be carried out in institutions approved by the Medical Society of Virginia for treating cancer in general. This means any hospital with certificated tumor clinics.

(2) In such hospitals a definite bed capacity must be rigidly allocated to this service so that beds for acute diseases are not encroached upon. Such beds are preferably to be in cubicles or rooms, rather than in open wards.

(3) Hospitals must have available professional personnel, both physicians and nurses, in the same proportion as for acute disease.

(4) The cost to the Virginia Cancer Foundation will be at a flat per diem. Since this is a new venture and since it is probable that the cost to the hospitals per day of these patients will be somewhat greater than for patients with acute disease, the exact rate is subject to agreement between the hospitals concerned and the Executive Committee.

(5) Patients admitted for advanced care at the expense of the Virginia Cancer Foundation must come through nomination by the Directors of the certificated tumor clinics. Medical indigence must be certified in the manner in which patients are now certified for treatment. Applications must be approved by the Director of the Virginia Cancer Foundation.

(6) In the event that any hospital or hospitals make beds available for the care of advanced cancer, patients may be nominated for admission at Virginia Cancer Foundation expense from any locality in the state and should be admitted to the nearest available institution.

These regulations are hereby submitted for approval.

With the cooperation of the VIRGINIA MEDICAL MONTHLY, the Cancer Committee will publish six bulletins during the year 1945 at a cost of \$75.00 or \$12.50 per bulletin. The Cancer Committee asks for an appropriation of \$100.00 to cover the publishing of six more bulletins during 1946. In addition, the Cancer Committee asks for an appropriation of \$20.00 to cover its expenses for postage and stationery.

Respectfully submitted

EDWIN P. LEHMAN, *Chairman*  
 GEORGE COOPER, JR., *Vice-Chairman*  
 I. C. RIGGIN  
 R. L. PAYNE  
 FRED M. HODGES  
 R. P. BELL  
 HUGH H. TROUT  
 I. A. BIGGER  
 A. B. GATHRIGHT

### Industrial Health

For the term 1944-45 the Committee on Industrial Health, due to travel restrictions and other encumbrances, decided to coordinate its entire program with the Bureau of Industrial Hygiene of the State Department of Health. Therefore, no programs were given at any of the com-



ponent societies. The following outlines briefly the activities engaged in by the committee in cooperation with the Bureau of Industrial Hygiene.

Industrial health activities for the past year were greatly increased throughout the State. One of the primary causes in stimulating these activities was due to the amendment to the State Workman's Compensation Law, which became effective July 1, 1944. Occupational disease reports under this law were made available to the State Health Department through the cooperation of the State Industrial Commission. A total of 330 reports were received by the Bureau of Industrial Hygiene and 162 of these were investigated. In following up these reports visits were made to individual plants and conferences were held with the management and the physicians diagnosing these cases. A large amount of educational work was thus performed both in acquainting the management with health hazards existing in the plant and the proper means for minimizing these hazards, and acquainting physicians with the various services offered by State and local health departments. Many general practitioners were contacted and the latest available information on industrial diseases, especially dermatitis, was brought to their attention. Pamphlets on patch testing were distributed to interested physicians. In addition, the services of the Industrial Hygiene laboratory were made available to those physicians who requested this service.

A number of lectures were given to students of the Medical College, in which the importance of industrial health was emphasized. During the annual seminar conducted by the State Labor Department, lectures and demonstrations were presented to the labor inspectors with very gratifying response. A lecture on the scope and methods of Industrial Hygiene was given by your chairman and members of the State Bureau of Industrial Hygiene at the annual seminar of industrial nurses. In cooperation with the State and local safety councils, the subject of industrial health was presented and discussed at a number of State-wide and local meetings. Widespread interest in industrial health was evidenced from the responses at these meetings.

In addition to the above mentioned educational activities, 600 pieces of literature were distributed among physicians and industrialists. An article relating to welding fumes and a means of their control appeared in the *Virginia Health Bulletin*, which has State-wide circulation.

Industrial Health services of all types were given to 117 industrial plants in the State involving approximately 24,000 workers. During the same period 81,625 industrial workers in 71 plants were given chest x-rays. The committee was very active in sponsoring the promotion of this service. The State Health Department operates two 35 mm photo-fluorographic mobile x-ray units and future plans call for contemplated acquisition of additional equipment and personnel to keep pace with the increasing scope of this work. One of the most important undertakings was the complete x-ray survey at the Norfolk Navy Yard.

The committee believes that in order to render a more complete health service, uniform system of occupational disease reporting is necessary. To further this undertaking plans and record forms have been made and are now under advisement and consideration of the State Health Commissioner. Cooperation of all physicians in the State will be requested to assist in this program. It is believed that a complete occupational disease picture in this State cannot be obtained unless the physicians will use this system of reporting occupational diseases brought to their attention.

To further increase the scope of educational activities, a film and slide library is being contemplated by the State Department of Health and the Committee is sponsoring this project. Many industries have expressed their willingness in this project by granting permission to take the necessary photographs in their plants. It is planned to demonstrate the material thus obtained at meetings of local medical societies, safety meetings, and to various worker groups in the hope that a better appreciation of hygienic principles will be stimulated among the participants at these meetings.

It is the considered opinion of the committee that there is a definite need for legislation setting up the minimum requirements and standards of environmental sanitation in industry. This legislation should be actively supported by the Virginia Medical Society. The present situation in the State is such that in some plants sanitation is almost non-existent, whereas in others it is excellent. Your chairman has inspected many of the industrial establishments, and it is his experience that by far the majority of industrial establishments have substandard environmental sanitation.

Your chairman attended and participated in the joint annual meeting of the National Conference of Governmental Industrial Hygienists, American Industrial Hygiene Association and the American Association of Industrial Physicians and Surgeons. Due to travel restrictions many important meetings could not be attended.

The committee would like to take this opportunity to express its appreciation for the splendid cooperation of the Bureau of Industrial Hygiene of the State Department of Health.

W. L. WEAVER

W. B. BARTON

H. U. STEPHENSON

ALEXANDER McCausland

G. H. KINSER

J. B. PORTERFIELD, *Chairman*

#### Advisory to Woman's Auxiliary

Our Committee has acted in purely an advisory capacity. Due to restrictions of the office of Defense Transportation, the annual meeting was cancelled in June. There is no Woman's Auxiliary in Roanoke and it was decided that it was too late to attempt to hold a meeting, which would have had to be arranged by the officers.

In passing, we would like to commend the work of the Auxiliary, the enthusiastic efforts of its officers and members. It deserves the whole-hearted support of the Med-



ical Society of Virginia. In the future years, we hope the Auxiliary will meet with us.

MALCOLM H. HARRIS, *Chairman*  
J. L. DECORMIS  
D. C. WILSON

### Medical Examiner System

Your committee has not found it necessary to meet since the last meeting of the Medical Society of Virginia, but it is prepared to carry out the instructions of the Society with reference to submitting a bill to the next Legislative Assembly covering a medical examiner's system for the state. Its activities from this time on will be largely those of assisting the Legislative Committee which is charged with the responsibility of seeing this bill through the Legislature.

WYNDHAM B. BLANTON, *Chairman*  
M. B. BEECROFT  
K. D. GRAVES  
J. EDWIN WOOD, JR.  
ERNEST G. SCOTT  
J. H. SCHERER  
W. D. KENDIG  
G. B. SETZLER  
GEO. C. WILLIAMS  
W. O. BAILEY

### Rehabilitation

The Committee on Rehabilitation has had no meetings and hence, no report.

WILLIAM B. PORTER, *Chairman*  
J. M. EMMETT  
I. C. RIGGIN  
H. B. MULHOLLAND  
T. DEWEY DAVIS

### Delegates to Roanoke Meeting.

The following delegates and alternates have been appointed from the component societies to the meeting of the House of Delegates in Roanoke. If your society has not reported, please see that names are sent to headquarters, 1200 East Clay Street, Richmond 19, at once.

<i>Delegate</i>	<i>Alternate</i>
<b>Accomack</b>	
Dr. O. R. Fletcher	Dr. J. C. Doughty
<b>Albemarle</b>	
Dr. T. J. Williams	Dr. Percy Harris
Dr. McLemore Birdsong	Dr. R. T. Ergenbright
Dr. W. Roy Mason, Jr.	Dr. M. D. Foster
<b>Alexandria</b>	
Dr. James Love	Dr. James Gooch
<b>Alleghany-Bath</b>	
Dr. J. M. Emmett	Dr. J. V. Jordan
Dr. S. P. Hileman	Dr. I. T. Hornbarger

<i>Delegate</i>	<i>Alternate</i>
<b>Arlington</b>	
Dr. J. B. Sullivan	Dr. Joseph Barker
<b>Augusta</b>	
Dr. Guy R. Fisher	
Dr. H. G. Middlekauff	
<b>Bedford</b>	
Dr. T. P. West	Dr. C. R. Titus
<b>Buchanan-Dickenson</b>	
Dr. J. C. Moore	Dr. P. Q. Daniel
Dr. R. L. Hillman	Dr. R. L. Phipps
<b>Charlotte</b>	
Dr. Thomas Watkins	Dr. William Chalmers
<b>Danville-Pittsylvania</b>	
Dr. P. W. Miles	Dr. J. J. Neal
<b>Elizabeth City</b>	
Dr. F. A. Kearney	Dr. R. H. Wright, Jr.
<b>Fauquier</b>	
Dr. M. B. Hiden	
<b>Floyd</b>	
Dr. S. T. Yeatts	Dr. F. Clyde Bedsaul
<b>Fourth District and Southside</b>	
Dr. J. M. Habel	Dr. H. C. Rucker
Dr. D. A. Christian	Dr. F. H. Lukin
Dr. F. N. Mallory	Dr. T. H. Anderson
Dr. G. M. Naff	Dr. L. P. Jones
Dr. W. D. Kendig	Dr. H. E. Whaley
Dr. C. V. Montgomery	Dr. P. H. Winston
Dr. W. M. Phipps	Dr. F. M. Howell
Dr. J. H. Smith	Dr. F. R. Crawford
Dr. W. R. Warriner	Dr. J. A. B. Lowry
Dr. F. E. Steere	Dr. B. H. Knight
Dr. T. F. Jarratt	Dr. R. B. McEwen
Dr. C. S. Dodd	Dr. Meade Edmunds
<b>Fredericksburg</b>	
Dr. T. Welch Dew	
Dr. L. F. Lee	
Dr. G. A. Reynolds	Dr. John Broadus
Dr. J. E. Taylor	
<b>Halifax</b>	
Dr. W. Lloyd Eastlack	Dr. Jno. A. Owen

<i>Delegate</i>	<i>Alternate</i>	<i>Delegate</i>	<i>Alternate</i>
<b>James River</b>		<b>Piedmont</b>	
Dr. O. L. Huffman	Dr. T. E. Patterson	Dr. E. D. Davis	Dr. J. H. Yeatman
Dr. E. B. Nuckols	Dr. N. P. Snead		
Dr. J. H. Yeatman	Dr. L. W. Hulley	<b>Princess Anne</b>	
		Dr. Ira Hancock	Dr. W. L. Taylor
<b>Loudoun</b>		<b>Richmond</b>	
Dr. W. O. Bailey		Dr. T. Dewey Davis	Dr. Frank Johns
<b>Louisa</b>		Dr. Douglas Chapman	Dr. A. I. Dodson
Dr. H. S. Daniel	Dr. H. G. Byrd	Dr. M. Pierce Rucker	Dr. H. Hudnall Ware
<b>Lynchburg</b>		Dr. I. A. Bigger	Dr. Harvey Haag
Dr. E. A. Harper	Dr. E. G. Scott	Dr. W. L. Peple	Dr. John Lynch
Dr. J. T. Hundley		Dr. Carrington Williams	Dr. James F. Blades
		Dr. A. L. Herring, Jr.	Dr. T. B. Washington
<b>Mid-Tidewater</b>		Dr. Rex Blankinship	Dr. Basil B. Jones
Dr. H. A. Tabb		Dr. Fred P. Fletcher	Dr. James B. Stone
Dr. Clarence Campbell		Dr. G. R. Maloney	Dr. Turner S. Shelton
Dr. R. D. Bates		<b>Roanoke</b>	
Dr. M. H. Harris		Dr. F. A. Farmer	Dr. T. A. Kirk
Dr. R. B. Bowles		Dr. W. L. Powell	Dr. A. M. Groseclose
Dr. A. L. Van Name		Dr. W. R. Whitman	Dr. J. O. Boyd
Dr. J. R. Parker		Dr. H. B. Stone	Dr. G. S. Hurt
<b>Nansemond</b>		<b>Rockingham</b>	
Dr. J. M. Habel, Jr.	Dr. C. H. Dawson	Dr. N. M. Canter	Dr. E. B. Miller
<b>Nelson</b>		<b>Russell</b>	
Dr. B. F. Randolph	Dr. L. Miller	Dr. W. C. Elliott	Dr. R. F. Gillespie
<b>Norfolk</b>		<b>Southampton</b>	
Dr. Claiborne Willcox	Dr. Robert Matthews	Dr. R. L. Raiford	Dr. J. A. Grizzard
Dr. Foy Vann	Dr. C. H. Lupton	<b>Southwestern</b>	
Dr. N. F. Rodman	Dr. W. P. Moore, Jr.	Dr. C. F. Graham	Dr. E. M. Chitwood
Dr. P. St. L. Moncure	Dr. C. M. McCoy	Dr. S. A. Tuck	Dr. M. C. Newton
Dr. Frank H. Redwood	Dr. A. A. Burke	Dr. George A. Wright	Dr. R. D. Campbell
Dr. C. J. Andrews		Dr. A. M. Showalter	Dr. J. J. Giesen
<b>Northampton</b>		Dr. John A. Wolfe	
Dr. S. K. Ames	Dr. W. C. Henderson	Dr. V. J. Cox	Dr. W. P. Davis
<b>Northern Virginia</b>		Dr. D. S. Divers	Dr. W. F. Delp
Dr. George Long		Dr. W. A. Porter	Dr. J. G. Cox
Dr. O. W. Carper		<b>Tazewell</b>	
Dr. C. O. Dearmont		Dr. Mary E. Johnston	Dr. W. C. Jackson
Dr. P. W. Boyd		<b>Warwick</b>	
Dr. John Snead		Dr. W. R. Payne	Dr. E. B. Mewborne
Dr. H. W. Miller		<b>Williamsburg-James City</b>	
<b>Orange</b>		Dr. A. M. Sneed	Dr. J. R. Parker
Dr. Lewis Holladay		<b>Wise</b>	
<b>Patrick-Henry</b>		Dr. C. B. Bowyer	Dr. F. E. Handy
Dr. W. N. Thompson	Dr. D. H. Mason		Dr. F. S. Givens
Dr. F. B. Teague			

# VIRGINIA MEDICAL MONTHLY

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*Editor Emeritus*

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*Editor*

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### The Medical Implications of the Atomic Bomb

SOME of us remember when the Roentgen rays were discovered. The very obvious penetrating quality of the new form of energy was studied and various uses were made of it. It was some time before we were aware that the x-rays had other almost unbelievable powers. The effect upon living tissue was both stimulating and destructive, depending upon the dosage and screening. Furthermore there was some selectivity depending upon the structure of the tissue involved. Before this was learned many pioneers in the field of radiology became sterile, lost fingers or limbs and some even lost their lives. When radium was discovered the scientific world was ray-conscious and there were fewer disasters. Nevertheless we still have radium and x-ray "burns", which are difficult to heal. In fact they behave in a way entirely different from injuries caused by heat that is produced by oxidation.

For this reason the first reports from Hiroshima of rescuers being stricken when they entered the devastated area did not sound too fantastic. The greatest obstacle to believing them was that they were Japanese reports. We are now getting reports from American sources. Vern Haugland gives an interesting account of Hiroshima and it happened that one of his interpreters was a Japanese physician. He has something to say about the injured. The bomb was exploded over Hiroshima at a height of from 1000 to 1500 feet. For this reason the surface of the earth was not rendered radio-active as was the case with the experimental bomb in Arizona, which was set off at a height of 100 feet. The death toll at the time of Haugland's visit had mounted to 53,000 and it was expected to reach 80,000 eventually. Many persons who were only slightly wounded died from no apparent cause and any who were shocked by the atomic bomb were in danger of external or internal hemorrhages. Even slight scratches or burns were apt to become seriously infected.

The situation offers a wonderful opportunity for investigation in pathology. Those who were killed instantly were probably so completely destroyed that there is no hope of learning anything about the effect of atomic energy upon living tissue from that



source. The late and secondary deaths should give a clue. Furthermore those who have been exposed to the blast and who are still living should be subjected to careful clinical study. No one can predict what the future holds in reference to atomic energy, and no opportunity should be lost for studying its effect upon human beings.

### The Country Medical College of the Nineteenth Century

THE country medical college arose in the northeastern part of the United States and had its greatest development there. Elsewhere such institutions were begun but did not meet with the success they did in New York and the New England States. In Virginia there were three: The Medical School of the Valley of Virginia at Winchester, the Winchester Medical College and Randolph Macon Medical Department in Prince Edward County. The decade of the highest success of the country medical college was from 1830 to 1840. New England had six such schools. In the order of their founding they were located at Hanover, N. H., Castleton, Vt., Brunswick, Me., Burlington, Vt., Pittsfield, Mass. and Woodstock, Vt. The three Vermont institutions have been interestingly traced by Frederick Clayton Waite (*The Story of the Country Medical College*, Vermont Historical Society, 1945). These three schools had such checkered careers and changed their names and affiliations so frequently, that Dr. Waite performed quite an historical feat in straightening them out. About the only thing that did not change was the location and the best way to avoid confusion is to refer to them by their locations.

The country medical college was popular because it was inexpensive. Its prime function was granting an M.D. degree. To obtain such a degree the student must have had several years of work with a preceptor, attended two courses of lectures (the same lectures repeated) and passed his examinations at the end of the second course. To grant a degree the college must either have a charter granted by the State Legislature or have an "affiliation" with an arts college that had such privileges. For a number of years the school at Woodstock was unable to secure a charter. Its first "affiliation" with Waterville College, Maine, consisted of paying the President of Waterville six dollars to sign each diploma. There is no record of the president ever going to Woodstock where the medical graduates received their degrees. Later a somewhat closer affiliation was formed with Middlebury College, which had previously been affiliated with the medical school at Castleton. That this was merely a matter of expediency is shown by the fact that as soon as the legislature granted the Woodstock school a charter, this affiliation was terminated.

The lecture course ran for 14 weeks. In urban schools this was given in the winter months. The country colleges gave their lecture course either in the spring, summer or fall. The colleges were known as spring, summer, or fall colleges according to the time of the lecture courses. This allowed for an interchange of professors. A great number of popular lecturers gave three and even four courses a year. Oliver Wendell Holmes, for instance, taught at Dartmouth, which was a fall college, as well as in Boston. Nathan Smith, perhaps the greatest of the peripatetic teachers taught for years at Yale, Bowdoin and Dartmouth. It also enabled students to migrate. By going to a spring and a fall college they were able to get a degree in the same year. The college at Castleton gave a spring and a fall course of lectures so that their students could get their degrees without migrating, but this was looked on with disfavor by certain authorities, especially in New York. The Woodstock college was more subtle. It was a spring school. The Berkshire Medical College at Pittsfield,

Mass., was a fall college. For years they had practically the same faculty. At the end of the spring course at Woodstock in Vermont they would cart their charts and cabinets to Pittsfield in Massachusetts where they would repeat the course to many of the same students. Such shortening of the curriculum caused no comment. The student could start in Vermont and finish in Massachusetts or vice versa.

The decline of the country medical college began in the fifties and none that was not located in the same town with a liberal arts college survived the Civil war. Among the factors in this decline Waite mentions the discovery of anesthesia and the accent that this discovery gave to major surgery and hospitals. A country town could not support a hospital. The founding of the American Medical Association in 1847, largely under the stimulus of physicians in the larger cities, gave prestige to urban medical colleges. The advance in methods of communications, the telegraph and the railroad, made cities more familiar and easier of access to those living outside of them. The financial stringency of the thirties made the country medical colleges, with their low cost, popular. The stringency had passed by 1850 and the popularity of the country medical colleges rapidly declined.

### Hugh Hampton Young, 1870-1945

IN the death of Dr. Hugh Young, medicine has lost a colorful and unique character. When the Southern Medical Association met in Oklahoma City the story went the rounds about Hugh Young's first venture away from home. He carried a letter of introduction from the leading banker of San Antonio to the leading banker of Oklahoma City, setting forth that the bearer was the son of General William Hugh Young of the Confederate Army and the grandson of Colonel Hugh Franklin Young of the Mexican War, etc., etc. The Oklahoma banker wrote back "What can he do, we do not want him for breeding purposes." Had the Oklahoma banker written fifty years later, he probably would have asked "What can't this man do?"

In the four years he was at the University of Virginia he took all the degrees they had—A.B.; A.M.; and M.D. He then went to Hopkins where he created the specialty of Urology, established the first "institute" and broke away from the long established hospital architecture of Billings. The esteem with which he was regarded in the profession is shown by the fact that he was president at various times of the American Urological Association, the American Association of Genito-Urological Surgeons, the Medical and Chirurgical Faculty of Maryland, and the International Congress of Urology. He is credited with influencing the passage of bills which had nation-wide effect in the campaign against tuberculosis. He was also active in the creation of the National Institute of Health, and, as chairman of the Maryland State Lunacy Commission, had much to do with the development of the mental hygiene movement. In the first World War, he boasted of having made France safe for democracy and, for his work in urology with the American Expeditionary Forces, he received the Distinguished Service Medal. Besides these medical activities he was many times vice president of the Baltimore Museum of Art, was president of the Baltimore Opera Club, the Lyric Theater, and the War Memorial commission which served to commemorate Maryland heroes of World War I. For years he was chairman of the Maryland State Aviation Commission and was active in the selection of sites for airports. He was also commodore of the Gibson Island Yacht Squadron.

Dr. Young was a "campaigner" all his life. At the last meeting of the American Association of the History of Medicine, he presented an interesting and well illustrated

paper on "Crawford W. Long: The Pioneer in Ether Anesthesia," in which he recounted his efforts, beginning in 1896, to get Long recognized as the first to give anesthesia. The article is replete with pictures of Long, his several homes, many of his teachers and of the Medical College of Georgia at Augusta where in 1848 Long told for the first time the story of his discovery of ether anesthesia. As proof that his campaign had succeeded, where even the great Marion Sims had failed in the preceding generation, he showed pictures of the various monuments and memorials to Long, most of which he himself helped to unveil. There is a shaft erected at Jefferson, Ga. in 1910; a bronze medallion by Tait McKenzie in the Medical Building of the University of Pennsylvania, 1912; a monument at the University of Georgia at Athens, 1921; a statue in the United States Capitol, 1926; a statue at his birth-place, 1936; a tablet commemorating the site of his office in Jefferson, Ga. where in 1842 Long gave the first anesthesia, 1936. In 1936 the University of Edinburgh accepted a plaque of Long from the Southern Society of Clinical Surgeons and in 1940 the U. S. Government issued a postage stamp on which Long's picture was reproduced. We cite this at some length as it illustrates the thorough way in which Dr. Young did everything that he undertook.

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### Floral Eponym (31)

#### AVINCENNA VERBENACEAE

#### AVICENNA, 980-1036

*Avicennia verbenacae*, Black Mangrove, White Mangrove, are trees or shrubs, usually found growing in mangrove swamps and on the shores of tropical estuaries. They are remarkable for their vertical leafless breathing-stems that rise above the surface from their spreading horizontal roots. The flowers, while inconspicuous, are fragrant and very rich in honey. Bee-keepers in Florida often transport their entire apiaries to the coast along the Indian River in the blooming season which is June and July. The honey is white and of excellent flavor and commands the highest market price.

Avicenna, or Ibn Sina, is called "the Prince of Physicians", but whether from his manner of living or from his medical knowledge is not clear. He was court physician and vizier to several caliphs and physician in chief to the celebrated hospital at Bagdad. In his "Canon" he attempted to codify all Greek and Arabian medical knowledge. He recommended wine as the best dressing for wounds and knew that the urine of diabetics tasted sweet.



## News

### House of Delegates, Medical Society of Virginia.

Officers of the Society regret there was too little time in which to arrange an adequate program for a full meeting of the Society after restrictions in regard to conventions were lifted. There will, however, be a full meeting of the House of Delegates and a large representation is expected for this. These sessions will be held at Hotel Roanoke, October 22 and 23, and the hours are:

MONDAY, OCTOBER 22

10:00 a.m.—Council

2:30 p.m.—House of Delegates

TUESDAY, OCTOBER 23

9:00 a.m.—House of Delegates.

Delegates who are unable to secure reservations at Hotel Roanoke will find excellent accommodations at the Patrick Henry or Ponce de Leon Hotels, both in short walking distance of the meeting place.

Reports of the various committees will be considered at the first session of the House, and chairmen of the committees are invited to be present to take part in discussions. These reports appear in this issue of the MONTHLY.

The Woman's Auxiliary, some weeks ago, decided also to have only a skeleton meeting, and arranged for a session of its Board in Richmond, a week before the doctors' meeting. For this reason, there will be no gatherings for the ladies in Roanoke, but it is hoped that in 1946, the Society and Auxiliary may have larger and better meetings than ever before.

### The Southern Medical Association

Has decided to hold its regular annual meeting, to be known as "The Victory Meeting". This will be in Cincinnati, November 12-15, under the sponsorship of the Campbell-Kenton County Medical Society of Kentucky, and is to be a Kentucky meeting. Further details may be secured from the Association offices, in Empire Building, Birmingham 3, Alabama.

### A.M.A. House of Delegates.

Although their annual meeting was canceled, Dr. Olin West, secretary of the American Medical Association, announces that the 1945 sessions of the

House of Delegates will be held in Chicago, December 3-6.

### Doctors in Service.

The following promotions of Virginia doctors have recently been noted:

To Commander, USNR—Dr. John R. Hamilton, Nassawadox

To Colonel, AUS—Dr. A. Stephens Graham, Richmond

To Lieutenant Commander, USNR—Dr. John S. Pearson, Jewell Ridge

To Lieutenant Colonel, AUS—

Dr. Benjamin Randolph Allen, Suffolk

Dr. Ben L. Boynton, Norfolk

Dr. Joseph Moore Dixon, Roanoke

Dr. Earl Joseph Haden, Ore Bank

Dr. Edward Marion Holmes, Jr., Richmond

Dr. Herbert C. Jones, Petersburg

Dr. John Tabb Walke, Richmond

To Major, AUS—Dr. William Taliaferro Thompson, Jr., Richmond

To Captain, AUS—

Dr. Robert Hardley Barnes, Jr., Richmond

Dr. Lyle E. Delap, Radford

Dr. Jack Langford Ulmer, Richmond

### 45th General Hospital Honored.

The Meritorious Service Unit Plaque has been awarded the 45th General Hospital for superior performance of duty in the accomplishment of exceptionally difficult tasks in the Peninsula Base Section for the period June 1, 1944, to December 1, 1944.

The 45th General Hospital was broken up on May 12th and most of the doctors have been assigned to other units. The Hospital was composed principally of Richmond doctors and a good many of them have been home on leave during the past month.

### Dr. E. S. Groseclose,

Of Lynchburg, who has been in active service since August 1942 and now a Commander in the Medical Corps, USNR, recently wrote an appreciation for the copies of the MONTHLY which he had received since being in service, stating that they had

enabled him to keep in touch with things medical back home and also with other doctors in service. Since September 1944 he has been in the Pacific as Senior Medical Officer aboard an attack transport and has had many interesting and rugged experiences. He stated that he had traveled over the greater part of the western and southwestern Pacific and had met with many Virginia physicians in all branches of the service.

#### **Released from Service.**

The following doctors have recently been released from military service and are now back in private practice:

Dr. Staige D. Blackford, University  
Dr. George S. Bourne, Roanoke  
Dr. Ernest P. Buxton, Jr., Richmond  
Dr. A. D. Hart, University  
Dr. Holcombe H. Hurt, Lynchburg  
Dr. J. T. Hundley, Lynchburg  
Dr. R. Campbell Manson, Richmond  
Dr. C. D. Moore, Wytheville  
Dr. N. D. Nelms, Hampton  
Dr. Kinloch Nelson, Richmond  
Dr. L. B. Sheppard, Richmond  
Dr. M. M. Pinckney, Richmond  
Dr. Douglas B. Stratton, Roanoke  
Dr. Harry Warthen, Richmond.

If there are other Virginia doctors who have been discharged, please notify the office of the Medical Society of Virginia so the membership files may be kept up to date.

#### **Dr. Thomas N. Spessard,**

Norfolk, has recently received his Fellowship in the American College of Physicians. He is at present a Captain in the Medical Corps of the USNR., and is stationed at Shoemaker, California.

#### **New Officer Release Policy.**

A revised point system program which will return 13,000 physicians, 25,000 nurses, 3,500 dentists and an undetermined number of other Medical Department officers to civilian life by January 1946 has been announced by Major General Norman T. Jirk, The Surgeon General.

Under the plan those Medical and Dental Corps officers who have 80 points, are 48 years of age or have been in the Army since before Pearl Harbor will be released as surplus officers unless they are specialists in eye, ear, nose and throat work; plastic

surgery, orthopedic surgery, neuropsychiatry or are laboratory technicians. These specialists will be released if they were called to active duty prior to January 1, 1941.

In some cases essential officers may be retained by military necessity until replacements are shifted to their positions but none will be held in service after December 15, 1945, without their consent. Every effort will be made to release these officers at the earliest possible moment consistent with military needs, General Kirk said.

#### **New Health Officer at Newport News.**

Dr. J. N. Dudley, for sometime health officer for the Southside Health District with headquarters at Farmville, has been appointed health officer for the city of Newport News, and will assume this office on October 1. He succeeds Dr. W. Y. Garrett, resigned because of his health.

It is also announced that Dr. Thomas D. Walker, Jr., has been appointed city physician of Newport News to succeed Dr. Louis Loeb, retired.

#### **Dr. M. S. Foster**

Announces his removal from Bridgewater to Cynthiana, Ky., effective October 1.

#### **Soldiers' Memorials**

In the form of permanent establishments for the restoration of injured veterans, rather than stone and bronze monuments in public places, is the aim of the Baruch Committee on Physical Medicine founded in 1944 by Bernard M. Baruch with an endowment of \$1,190,000.

The Committee's subcommittee on war and post-war physical rehabilitation and reconditioning, made up almost entirely of medical corps officers of the armed services, has been working since last February on the project and has just sent out to institutions and consultants all over the country a blueprint of an ideal war memorial. The print shows the plans for buildings, equipment and staff required for such a center and plots the courses of treatment indicated for the restoration of maimed fighting men or injured war workers to useful activity.

Under the Baruch Committee plan, returned veterans may be placed in centers close to their homes, where they can see their families and friends almost constantly. So situated they will not feel neglected and forgotten but, on the contrary, they would be especially provided for under circum-

stances arranged and assembled for their rehabilitation with the sole aim of restoring them to normal life and useful activity. They will have, in addition, the benefit of a large variety of treatments and facilities quite new to physical medicine and only born of the present war.

#### **Dr. A. T. Brickhouse,**

City Health Officer of Hopewell, has also been named city coroner, to fill the unexpired term of Dr. J. C. Bodow, resigned. His term of office as coroner will last until December 31, 1947.

#### **The Chicago Lying-In Hospital,**

Founded by Dr. Joseph B. DeLee in 1895, in celebration of its fiftieth anniversary, on October the 29th, will present a program of clinics and papers by members of its professional staff and by distinguished scientists from other institutions. One of our members, Dr. E. C. Hamblen of Duke Hospital, is on the program.

#### **Married.**

Captain John Robert Massie, Jr., MC., AUS., Richmond, and Miss Emily Charlotte Taylor, Big Stone Gap, September 15th. He is a graduate of the Medical College of Virginia, class of '35, and has recently returned after two and a half years overseas with the 45th General Hospital.

Lieutenant (jg) Edwin Booth Vaden, Gretna, and Miss Anne Funsten Rogers, Roanoke, August 25th. He is a graduate of the Department of Medicine of the University of Virginia this year and is now stationed at the Naval Hospital, Fort Eustis.

#### **Dr. Milton C. Richards**

Has become physician and surgeon to the Richmond Fire Department, succeeding Dr. R. L. Creekmur who retired.

#### **Dr. DeJarnette Resigns.**

Dr. J. S. DeJarnette has tendered his resignation to the State Hospital Board as physician-in-charge of DeJarnette Sanitarium, subject to the convenience of the Board. Dr. DeJarnette became an assistant physician to Western State Hospital in 1889 and succeeded Dr. Blackford as superintendent in 1906. He held this position until 1943 when he became physician in charge of DeJarnette Sanitarium and Dr. D. L. Harrell was appointed superintendent of the Western State Hospital.

#### **Resigns as Pine Camp Head.**

Dr. B. B. Bagby, Jr., has tendered his resignation as medical director of Pine Camp Hospital, Richmond, to take effect upon appointment of a successor. Dr. Bagby went to Pine Camp as assistant medical director in 1939, having previously been on the medical staff at Catawba Sanatorium. In September 1943 he became medical director of the Camp, succeeding Dr. George A. Welchons, resigned. Dr. Bagby expects to move to Georgia where he will have a position similar to the one he has had in Richmond.

#### **Dr. Lewis A. Micou,**

Recently of Eagle Rock, is now located for general practice in Buena Vista.

#### **Dr. R. D. Garcin, Jr.,**

Richmond, veteran of two world wars, who was a lieutenant commander in the Navy until his discharge recently, has been installed as commander of Post 151, American Legion, for the coming year.

#### **James River Medical Society.**

At the July meeting of this Society, Dr. O. L. Huffman of Arvon was elected president; Dr. S. W. Selden of Kents Store vice-president; and Dr. Garland Dyches of Dillwyn was re-elected secretary-treasurer. At this time also, delegates and alternates were named to the Roanoke meeting of the House of Delegates of the State Society.

#### **Virginia Peninsula Academy of Medicine.**

Dr. William B. Porter, professor of Medicine at the Medical College of Virginia, addressed the Academy at its meeting on September the 17th, his subject being "Chest Pain of Non-Cardiac Origin". There was an attendance of over fifty at this meeting. Dr. Harvey G. Bland and Dr. Chester D. Bradley, both of Newport News, are president and secretary, respectively, of the Academy.

#### **Established Hospital for Lease.**

A Sanitorium for nervous, mental, alcoholic and drug cases, doing an excellent business, to a reputable physician or medical group. Dr. E. W. Stokes, 923 Cherokee Road, Louisville 4, Kentucky.—*(Adv.)*

#### **Virginia Medical Service Association.**

The annual meeting of this Association will be held in Roanoke, October 23rd, following the final



session of the House of Delegates of the Medical Society of Virginia. The Board of Directors will meet at 2:00 P. M., and the entire membership meeting will follow at about 3:00 P. M. The Alex. F. Robertson, Jr., Staunton, is president.

### **The International College of Surgeons**

Will hold its tenth annual Convention and Convocation on December 7th and 8th, at the Mayflower Hotel, Washington, D. C. A scientific program is arranged for both days. At this time approximately 200 men will receive their Fellowship. Further information may be received from the Executive Secretary, *pro tem*, Dr. Louis J. Gariepy, 16401 Grand River Avenue, Detroit 27, Michigan.

### **Physician Wanted.**

Physician for industrial dispensary in South. Must be graduate Class A School. Please write details and give references in first letter. Expenses of interview will be arranged for satisfactory applicants. Write to Medical Director, Box 590, Knoxville 5, Tennessee.—(*Adv.*)

### **School of Laboratory Technique.**

School of Medical Technology, State Department of Health of Kentucky announces a year's course in Hematology, Medical Chemistry, Serology, Bacteriology, Parasitology, Tropical Diseases and Urinalysis. Classes begin in September, February and June. Entrance requirements are two years college, including course in Chemistry and Biology.

Scholarships available. For further information apply to L. H. South, M.D., 620 South Third Street, Louisville 2, Kentucky.

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## **Obituaries**

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### **Dr. Edward Wilson Rawls,**

Prominent physician of Portsmouth, died September 6th, following a heart attack. While he had been in ill health for sometime, his death was unexpected. He was sixty years of age and graduated from the Medical College of Virginia in 1909. Dr. Rawls had practiced in Portsmouth for thirty years and had taken an active part in its civic and political affairs. He had been a member of the Medical Society of Virginia since 1916. His wife and several children survive him. His brother is Dr. Julian L.

Rawls of Norfolk, the incoming president of the Medical Society of Virginia.

### **Dr. Robert DuVal Jones, Jr.,**

Prominent Norfolk surgeon, died on September 3rd while on vacation in North Carolina. He had been in ill health for sometime, but resumed his practice a year ago. He was a native of New Bern, North Carolina, and forty-seven years of age. Dr. Jones graduated in medicine from the University of Pennsylvania in 1924 and began his practice in Norfolk in 1931. He was president of the staff of the Leigh Memorial Hospital. Dr. Jones was very active in the work of the Norfolk County Medical Society and had been a member of the Medical Society of Virginia for fourteen years. A sister survives him.

### **Major John Newton Dunn, MC., AUS.,**

Blackstone, died September 3rd in England. He was forty-three years of age and a graduate of the Medical College of Virginia in 1931. Dr. Dunn went on active duty in the Service in March 1942 and served as chief surgeon with a fighter group in England and Russia. He had been active in the civic and professional life of Blackstone and was a member of the Medical Society of Virginia. His wife and a brother survive him.

### **Dr. Mackall R. Bruin,**

Los Angeles, California, died March 10th after a long illness. He was born in Alexandria, Virginia, in 1867 and graduated in medicine from the University of Maryland in 1895. Dr. Bruin practiced for several years in Shenandoah County before going to California. He had been a member of the Medical Society of Virginia for forty-three years. His wife, three daughters and a son survive him.

### **Dr. William Ashby Davis,**

Agricola, who graduated from the University of Virginia, Department of Medicine, in 1942, later interning at Roper Hospital in Charleston, S. C., was killed in action in the North African area, April 20, 1944. He was a first lieutenant in the Medical Corps, and twenty-seven years of age.

### **Dr. John Minor Blackford,**

Seattle, Washington, died September 12th, at the age of fifty-six. He was a native of Alexandria, Virginia, and was graduated from the medical

school of the University of Virginia in 1910. Dr. Blackford was in charge of the medical section of the Virginia Mason Clinic in Seattle. His wife and three children survive him. A brother is Dr. Staige D. Blackford of the University of Virginia.

### An Appreciation of Dr. Beverley R. Tucker.

It is with deep sorrow that the Richmond Academy of Medicine records the passing of an ex-president and one of its most distinguished and valued members. Few have reached the heights of professional success that Dr. Tucker attained and none has been more genuinely beloved by his colleagues.

Dr. Tucker had been a member of the Academy since he began practice in Richmond in 1907. His achievements in his chosen field of neuro-psychiatry are well known and need not be enumerated here. Suffice it is to say that he was the first physician trained in this specialty to practice in Virginia and that throughout his life he devoted the major part of his talent and energy to this field. In addition to developing an enviable private clinic, he was consistently active in broadening the public health aspects of his specialty and in training young men to this work. A very large part of the progress in psychiatry that has been made throughout this section of the country is due to his devoted efforts.

Dr. Tucker was more than a great physician, he was a great citizen. Always public spirited, no call upon his time or talents from any worthy cause went unheeded. Whether in the field of politics, charities, cultural pursuits, or recreation, he generally held a positive view as to what he considered best for the community and was ready to give unstintingly of his efforts to bring it about. A man of strong convictions and ready wit, he avoided no controversies; yet he was never offensive and cherished no animosities. As a teacher Dr. Tucker was always popular. To undergraduate students he was sympathetic and patient with an unflagging humor that held attention. To the young men under his immediate tutelage and to the older men associated with him, he seemed as an elder brother.

Dr. Tucker loved life in all its aspects. He loved people and people loved him. So it was inevitable that he should have a host of friends in all walks of life. Eminence in his profession led to no affectations or snobbishness, nor did he ever lose that common touch. Though his was a life of unrelenting toil, as he was rarely idle, his recreation consisted in a different kind of work such as writing. He developed to the fullest the varied talents that had been given him.

While we deplore the loss of a devoted member, we are proud to have been his friends. We feel sure that the example of his remarkable life will live long in the memory of those who knew him and will serve as an inspiration to later generations of physicians.

HOWARD R. MASTERS

J. McCAW TOMPKINS

J. MORRISON HUTCHESON, *Chairman*

### Resolutions on Dr. Ashworth.

WHEREAS, God in His Infinite Wisdom has removed from our midst Dr. O. O. Ashworth in the very height of his usefulness,

BE IT RESOLVED that the Richmond Academy of Medicine has lost a valuable member, the medical profession a brilliant ornament, and we a loyal friend.

Osbourne Orlando Ashworth was born in Asheboro, N. C., on August 2, 1895. He was the eighth child. Early in life he came to Richmond in search of an education which he obtained in the Richmond Academy, Richmond College and the Medical College of Virginia where he graduated in 1921. Much of this time he earned a living by working in a drug store. He interned at St. Elizabeth's Hospital and continued his studies at Catawba Sanatorium and the Mayo Clinic.

When he began practice in Richmond his success was phenomenal. No one could have had a larger or more devoted clientele. Dr. Ashworth looked the picture of health but he had a series of illnesses that would have stopped an ordinary man. In 1936 a kidney was removed because of pyelonephrosis. In addition, he had a serious heart lesion and a retinal hemorrhage that threatened his eyesight. In spite of all this, he continued to practice with vigor. He even took his daily afternoon rest with enthusiasm. To see him hurrying about his daily work gave one the impression of boundless energy, which he devoted entirely to his patients. He played golf, but merely to make himself more efficient in his practice.

On December 16, 1925, Dr. Ashworth married Mary Wells Knight, daughter of Dr. and Mrs. John Clarence Knight of Plant City, Fla. With her background and temperament she made him the ideal doctor's wife, and bore him two fine boys, Osbourne Orlando, Jr., and John Sheridan.

BE IT FURTHER RESOLVED that these resolutions be spread upon the minutes of the Richmond Academy of Medicine, and that a copy of them be sent to the VIRGINIA MEDICAL MONTHLY and to Dr. Ashworth's family.

STUART MICHAUX

M. PIERCE RUCKER

EMMETT TERRELL, *Chairman*



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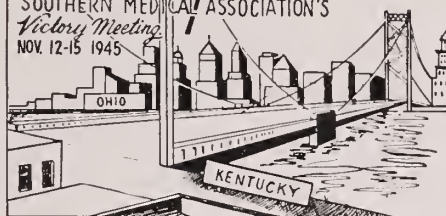
RICHMOND

VIRGINIA

## CAMPBELL-KENTON COUNTY MEDICAL SOCIETY OF KENTUCKY

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NOV. 12-15 1945



**THE VICTORY MEETING** of the Southern Medical Association will be held under the sponsorship of the Campbell-Kenton County Medical Society of Kentucky in Cincinnati, Ohio, November 12-15. It is a Kentucky meeting. The Southern Medical Association meetings always have been and always will be the essential meetings IN and FOR the South. The Southern as an essential medical organization has carried on without a break during the war—it has not missed a meeting. Now it will celebrate the victory with a great **VICTORY MEETING**. In its twenty-one sections, two general sessions, six conjoint meetings, and the scientific and technical exhibits, in a streamlined program, one will get the last word in modern, practical, scientific medicine and surgery.

**REGARDLESS** of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Cincinnati a program to challenge that interest and make it worth-while for him to attend.

**ALL MEMBERS** of State and County medical societies in the South are cordially invited to attend. And all members of state and county medical societies in the South should be and can be members of the Southern Medical Association. The annual dues of \$4.00 include the Southern Medical Journal, a journal valuable to physicians of the South, one that each should have on his reading table.

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# SHOULD VITAMIN D BE GIVEN ONLY TO INFANTS ?

**V**ITAMIN D has been so successful in preventing rickets during infancy that there has been little emphasis on continuing its use after the second year.

But now a careful histologic study has been made which reveals a startlingly high incidence of rickets in children 2 to 14 years old. Follis, Jackson, Eliot, and Park\* report that postmortem examination of 230 children of this age group showed the total prevalence of rickets to be 46.5%.

Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

\*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

**MEAD'S Oleum Percomorphum With Other Fish-Liver Oils and Viosterol** is a potent source of vitamins A and D, which is well taken by older children because it can be given in small dosage or capsule form. This ease of administration favors continued year-round use, including periods of illness.

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# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA


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November 1945



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subcutaneously or intramuscularly, ADRENALIN provides rapid symptomatic relief in asthmatic paroxysms; is useful in the prevention and treatment of other allergic reactions; localizes and prolongs the action of local anesthetics. Intravenously, it is used in shock and anesthesia accidents.



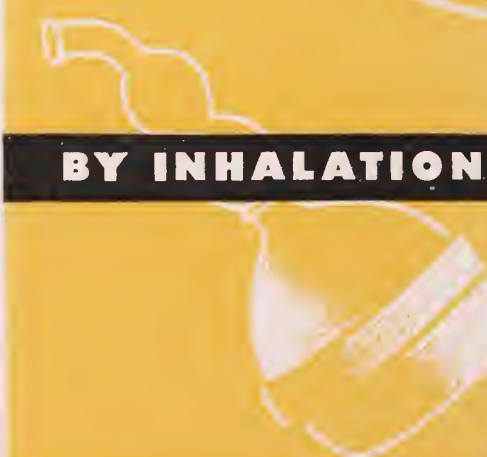
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# Virginia Medical Monthly

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## MEDICO-LEGAL ASPECTS OF CORONARY THROMBOSIS\*

J. MORRISON HUTCHESON, M.D.,  
Richmond, Virginia.

While the physician is concerned chiefly with the care of the sick and the prevention of disease, he is not infrequently called upon to assist in the solution of questions outside these fields. Among such extra-curricular activities, not the least important is the part the doctor plays in courts of justice, for here his special knowledge is often indispensable in interpreting facts to which legal precepts may be applied. To be sure, our present day court procedure with regard to expert testimony leaves much to be desired. The physician is made to appear as a partisan or advocate, whereas his role should be wholly that of an impartial interpreter of matters with which he has special acquaintance. Nevertheless, however distasteful may be the position in which we are placed, the work is a necessary part of our profession and I conceive it to be the duty of us all to strive to make the administration of justice the best that it can be made.

I have undertaken to speak of the legal implications of a condition, the incidence of which has apparently increased rapidly in recent years. During the same period compensation and indemnity insurance has shown a corresponding spread with the inevitable result that the relationship of coronary thrombosis to stress of various kinds is of growing importance. The question of such a relationship presents itself as a rule in connection with workmen's compensation insurance, personal accidents and double indemnity coverage for accidental death. It has seemed to me that this problem has been greatly confused and that some attempt at clarification may not be out of place.

For generations, the idea that sudden heart failure

is apt to follow physical or emotional stress has held sway both with physicians and laymen; and as coronary occlusion by thrombosis came to be commonly recognized it was naturally included in this category. One of the cases most often cited is that of John Hunter, who for twenty years suffered from angina pectoris and was accustomed to say that his "life was in the hands of any rascal who chose to annoy and tease him". He died suddenly at a board meeting in the midst of a controversy with a colleague. Numerous other similar instances have been recorded and it has been customary to consider any unusual circumstance that preceded or attended coronary occlusion as a precipitating cause.

In the past few decades we have learned much about coronary artery disease. We have come to regard angina pectoris as due to transient coronary insufficiency often provoked by effort or emotion. We have learned that coronary occlusion may occur and often does in patients who manifest only the symptoms of angina, especially when attacks occur at rest, and that these occlusions take place without symptoms or signs of infarction and may leave little or no significant scarring of the heart muscle. Though the exact mechanism of occlusion is not clear, it seems certain that hemorrhage into the arterial wall is a common initial event and that the extent and rate of such bleeding may determine many of the circumstances attending infarction. It is now also an established fact that infarction may occur without occlusion, depending apparently upon prolonged ischemia.

Notwithstanding some obscurity and considerable diversity of opinion as regards the nature of occlusion, one fact has become clear and is generally accepted and that is that thrombosis does not take place in coronary arteries that are normal. The

\*Read before the forty-eighth annual meeting of the Seaboard Medical Association of Virginia and North Carolina, at Richmond, November 30-December 1 and 2, 1943.

occurrence of coronary thrombosis postulates coronary sclerosis as a preexisting disease, often symptomless but slowly progressive. A clear appreciation of this fact would prevent much of the misunderstanding that attaches to cases in which sudden occlusion is the first indication of trouble.

There are those who still hold that coronary thrombosis may be precipitated by any one of a variety of causes. Fitzhugh and Hamilton<sup>1</sup> cite a hundred cases of angina in which death or coronary thrombosis was preceded by some departure from normal habits of living. They list as departures unusual physical exertion, prolonged activity with fatigue, persistence in activities that had repeatedly caused angina, travel, emotional strain, alcoholic excess, over-eating, starving, acute infection, medication (notably with thyroid and bromides), and sexual activity. Boas<sup>2</sup> expresses a similar view and adds to the list of precipitating causes, allergy, exposure to cold, insulin shock and hypoglycemia, electric shock, high altitudes and excessive heat as in the case of a patient who developed his attack on leaving a Turkish bath. It is argued that effort or other stimulus sufficient to increase blood flow may initiate intra-arterial hemorrhage or the rupture of an atheromatous abscess and lead to thrombosis; also that angina induced by effort with consequent local ischemia may in some way predispose to thrombosis.

Such conclusions are based upon evidence that is wholly circumstantial, while the explanations offered are highly speculative. It could be maintained with equal logic that slowing of the circulation as occurs during sleep or rest predisposes to thrombosis and large numbers of cases could be cited in which this seems to happen. In fact, Luten<sup>3</sup> states as his belief that most cases of coronary occlusion occur under circumstances associated with lowering of diastolic pressure and lessening of systolic output. The question can hardly be settled on these conflicting theoretical considerations. Nor is the evidence offered in case reports convincing as most of the supposed conditions of stress are little more than the individual is accustomed to experience time and again in his daily routine of living. If the factor of physical or emotional strain is essential or even important in the production of coronary thrombosis, it should appear in a form sufficiently definite to be recognized as such and in an impressive proportion of cases.

Approaching the problem from another angle, Master *et al.*,<sup>4</sup> from an analysis of the histories of 1440 occlusions with particular reference to activities preceding attacks, exclude exertion and emotion as precipitating factors. In 890 cases the attack occurred under the following circumstances: sleep 22.3 per cent; rest 31.1 per cent; mild activity 20.2 per cent; moderate activity 8.5 per cent; walking 15.8 per cent and unusual exertion 2 per cent. Sixty of these patients had attacks after being bed-ridden for weeks or months. Correlation of these percentages with the daily round of activities of the average person indicates that the onset of coronary occlusion is too well distributed to be connected with any particular circumstance of life and that any apparent relationship is purely coincidental. This observation is in accord with the experience of physicians generally and seems to argue overwhelmingly that, so far as bodily activity is concerned, coronary thrombosis is a purely fortuitous occurrence. It is the climax of slowly progressive arterial disease.

In recent years emphasis has been placed upon the occurrence of infarction of the myocardium as the result of coronary insufficiency independent of coronary occlusion. Theoretically, such a result might conceivably follow increased strain, yet Master *et al.*,<sup>5</sup> in a review of 48 cases of acute coronary insufficiency leading to infarction, found no instance in which the attack seemed to follow unusual effort or excitement.

In the case of the industrial worker, covered by liberal compensation laws, who suffers an acute coronary occlusion, some strain, often trivial, is invoked as a cause or at least as a precipitating or aggravating factor. To the critical mind such a claim has little foundation. Coronary sclerosis, without which coronary thrombosis does not occur, is present in varying degree from middle life on and sooner or later a vascular accident of some type may be expected. Certainly no special strain on the heart or elsewhere is necessary as such accidents commonly take place during sleep. It is also to be remembered that coronary thrombosis occurs more frequently among sedentary workers than among those whose occupations entail hard physical labor. However, the heart already damaged by coronary thrombosis may fail more rapidly as the result of even mild strain and the evaluation of this factor poses a difficult question, particularly in industrial cases. In one State at least it has been held that



"acceleration of previously existing heart disease to a mortal end sooner than otherwise it would have come is an injury within the meaning of the Workmen's Compensation Act". This dictum literally applied means that any physical act may be an injury. In contrast the law of another State provide that "Personal injury shall not include diseases except where the disease is the natural and direct result of a traumatic injury by accident, nor shall they include the results of a preexisting disease." Such a statute seems just as it permits apportionment of responsibility for death or disability between injury and disease.

In the case of double indemnity for accidental death of those who have been injured and die of coronary thrombosis, the question should be relatively easy. Most double indemnity contracts provide that death shall result "directly and independently of all other causes, from bodily injuries effected solely through external, violent and accidental means". Death, therefore, that depends upon the factor of coronary sclerosis should not be covered under such a contract. Yet physicians can be found who are willing to testify that coronary thrombosis results solely from a comparatively trivial injury suffered some time previously.

Another important question that frequently confronts us at the present day concerns the degree of disability to be expected in those who have recovered from coronary thrombosis. Undoubtedly, a victim of this disease has undergone a nerve racking experience and may well entertain some anxiety about his ability to return to active life. Having been warned by his physician that the level of his activities must be lowered, he is oppressed on the one hand by the fear of further damaging his heart and on the other of inability to earn a living. If he has health insurance he immediately turns to it for comfort. But, when he finds that in order to secure its benefits he must be totally disabled and when his insurance carrier raises some doubt on this point, he often succumbs to confusion and develops a psychoneurosis which, aggravated by litigation, may be more disabling than his heart disease.

In dealing with cases of this character it is necessary to remember that a considerable proportion of those who suffer a coronary thrombosis recover and are capable of living active and useful lives. The occurrence of a coronary thrombosis is not, as was formerly thought, a death sentence, nor does it con-

demn an individual to a life of permanent invalidism. In those who survive, the question of disability is related not to the scar in the myocardium nor even to the permanent defect that may persist in the electrocardiogram but rather to the condition of the heart as regards enlargement and functional capacity. If there is marked hypertrophy or if there is shortness of breath or anginal pain on moderate exertion, of course there is disability; and in order to live within his limits it is often necessary for an individual to refrain from all gainful occupation—a condition of total disability. However, it is of the utmost importance in the patient's own interest to distinguish between symptoms which are caused by heart disease and those that result from an accompanying neurosis. The former may be helped by abstinence from work, while the latter are almost invariably relieved by termination of litigation and return to active life.

Willius<sup>6</sup> has called attention to court decisions, in connection with this question, that are based on "political prejudice rather than on scientific facts" and has urged upon the medical profession the responsibility of exerting every effort to present the true issues involved. Without doubt erroneous medical testimony has contributed largely to judicial fallibility. The doctor, through sympathy for a patient and friend or a kind of loyalty to the side that employs him or even through failure to familiarize himself with available knowledge of the subject with which he is dealing, may be easily led into statements wholly at variance with established facts.

Very recently the newspapers stated that a Congressman of seventy had died unexpectedly on Monday, having suffered a heart attack following the delivery of a speech the preceding Friday. The implication was that the making of the speech had some etiological connection with the fatal event; even though Congressmen are accustomed to making speeches and men of seventy commonly die unexpectedly at any hour of day or night. This, however, is the popular view. It is shared by many doctors and has influenced strongly the determination of much litigation. In fact, it seems fair to state that at the present day a causal relationship between some preceding circumstance and sudden death is assumed unless it is proved otherwise. Such an assumption has no basis in medical knowledge and should not continue to influence court decisions. If the burden of proof were placed on the claimant



rather than on the defendant, it seems probable that much injustice and genteel extortion might be prevented and much unnecessary invalidism might be avoided.

#### SUMMARY

As the result of long standing prejudice and conflicting current opinion, there exists today a widespread belief that coronary thrombosis is caused by stress of various kinds. This belief has been reflected in court decisions in connection with insurance claims and continues to color medical testimony. Facts, amply supported by clinical and autopsy studies, indicate that coronary thrombosis does not occur in normal vessels and is not precipitated in sclerotic vessels by factors that accelerate the circulation. Many individuals who have suffered a coronary thrombosis recover completely or partially and are not necessarily totally disabled.

It is suggested that in claims based upon the rela-

tionship of coronary thrombosis to accident or injury, the burden of proof be placed upon the claimant rather than upon the defendant.

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#### New Books.

The following books recently added to the Library of the Medical College of Virginia are available to our readers under usual library rules:

- Annual Review of Physiology. v. VII. 1905.
- Baruch—Das Wasser in der Aertzlichen Praxis.
- Binger—The Doctor's job.
- Carter—Night of flame (A novel).
- Chandler—Introduction to parasitology. 7th ed. 1944.
- Clayton—Electrotherapy with the direct and low-frequency currents.
- Current Biography . . . 1944.
- Cutler & Zollinger—Atlas of surgical operations. 1939.
- Department of Neurology—Harvard Medical School. Vol. I, II, III & IV.
- Foley, ed.—The Best American short stories. 1943.
- Hamblen—Endocrinology of woman.
- Horwitz—Infeccion meningococica en Chile.
- Kupper—Medical state and national board summary. 1944.
- Massachusetts General Hospital—Memorial & Historical volume.
- Metropolitan State Hospital—Collected Lectures of the 70th Postgraduate Seminar in Neurology and Psychiatry.
- Porter—Straight down a crooked lane (Novel).

Rumney—A study of the social effects of public housing in Newark, N. J.

Rypins—Medical licensure examinations.

Schurigio—Gynaecologia historico-medica hoc est Congressus muliebris consideratio.

#### Ask Doctors' Aid in Office Shortage.

To relieve the present shortage of available office space, practicing physicians are urged to share their offices with doctors who are returning from service.

An editorial appearing in the September 29 issue of *The Journal of the American Medical Association* said: "In large communities, such as cities of over 100,000 population, the problem is apparently far more serious than in the smaller areas. In some larger cities physicians are even remodeling old houses into office space. . . . Many a physician whose office is not fully utilized either in the morning or in the afternoon or even in the evening can make available time and space, as well as the use of his own facilities. . . . The least that can be done for such veterans is to make available to them an opportunity to begin the earning of a livelihood at the earliest possible moment."

## A PLEA FOR OPERATIVE CONSERVATISM IN OBSTETRICS\*

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Cesarean section is the suprapubic delivery of an intrauterine fetus. It is probably very ancient and has been practiced even among primitive peoples. Historically, it

- (1) was very rarely resorted to, because it
- (2) carried a prohibitively dangerous mortality for the mother, and
- (3) was indicated only in the very smallest pelvis, through which it was absolutely impossible to deliver a live baby, and almost impossible to deliver a dead one.

With the advent of antisepsis, asepsis, and the suture technic of Sanger, there has within my own lifetime been a tendency to change these historic facts by

- (1) employing it much more frequently, because
- (2) it is technically easy and is mistakenly regarded as a *safe* operation; on this account
- (3) it is used for much more numerous and broader indications than formerly.

There is abundant reason for believing that this change in attitude has been so excessively sweeping as to create in many hands an actual abuse of a most valuable and life-saving operation.

It is further believed that this abuse is not because refinement of technic in cesarean section has not kept pace with improvement in other lines of surgery, but rather because it is all-too-frequently employed without discriminating judgment based on sound obstetric knowledge of the dangers, limitations, and indications for its use.

In attempting to evaluate the proper application of the operation for you, I will not attempt to discuss theories nor collected experience, but will confine my discussion, except for minor references to two other sources, to the experience of the single clinic with which I am connected. This experience embraces more than thirteen years, 73,703 living births, and 1,891 cesarean sections. I think this work is extensive enough to be significant. It has all been done under the responsibility of the same chiefs of service, who have consistently analyzed and learned from it. Our present attitudes may

therefor be conceded to be mellowed and matured.

In the light of our own experience, let us examine the three primary factors of our discussion.

(1) Frequency: Our incidence is 2.81 per cent of live births for the whole period. Annual rates have varied from 2.49 per cent to 3.60 per cent.

Lull, in a 10 year study of 45 Philadelphia hospitals, finds the average incidence in the whole group to range from 2.43 to 2.88 per cent. In the 13 hospitals of this group handling the largest material, the rates varied from an almost unbelievable low of 0.57 per cent to 5.59 per cent; only two exceeded 4 per cent.

From this it may be reasonably concluded that any incidence in large groups of cases up to 4 per cent may be considered reasonably conservative. Any incidence much above this must be considered unwarrantably high.

(2) Mortality: An unfortunate tendency is widely prevalent to designate cesarean section as "elective". This word is defined by the dictionary as indicating a choice or selection in relation to several alternatives. Cesarean section, then, if "elected" in preference to vaginal delivery, *except for specific necessitous indication*, implies an equality of risk as between the two methods of delivery. Such implication is not valid. Our general mortality in relation to live births is 0.277 per cent. Our cesarean section mortality is 1.45 per cent—more than five times as great.

In the 13 largest groups of Lull's tabulation, the mortality rate varies from zero to 9.09 per cent, the average of all the Philadelphia hospitals in 1941, 2.46 per cent. This is almost *ten times* our average maternal mortality. In short, cesarean section is *emphatically not* an operation devoid of danger. Therefor it must *not* be employed at all except for real indication on the basis of careful individualization of each case.

(3) Indications: Here the historical value of the operation continues to be exemplified, for the most frequent proper indication for section, in our cases 56 per cent of the whole, is feto-pelvic disproportion. Ten and a half per cent, the second largest

\*Read before the Peninsula Academy of Medicine, Newport News, Va., March 19, 1945.

group, is done for previous cesarean section. If the majority of the original sections in these patients were done for feto-pelvic disproportion, then nearly two-thirds of all operations are done for this indication.

But when we today speak of feto-pelvic disproportion, or disparity of size between the passenger and the passage, we do not refer to the time-honored "absolute contraction" of the pelvis through which a living child cannot possibly be born. Our standard of degree of contraction has properly been liberalized so that "disproportion" is now a relative term, applicable broadly to any situation where the mechanical circumstances of labor imply less damaging trauma to maternal soft parts and to the fetus, if delivery is by the abdominal route.

Hence the determination of such mechanical circumstances is in no sense determined by slide-rule estimation of the pelvic bones. Instead it depends on competent obstetric judgment compounded of knowledge of the shape and size of the pelvis, the size of the baby, the constitution of the patient, the efficiency of uterine function and a number of corollary factors.

Therefor, absolute prognosis prior to the onset of labor is seldom possible. Final decision must depend on actual observation of labor progress. Here, again, even in experienced observers, human fallibility sometimes causes an impasse where ultimate realization of the necessity for section brings the operator face to face with an inordinately high risk for his patient unless special variation of technic can be resorted to.

Our rule is that if a patient requiring cesarean section

- (a) has been in labor more than 24 hours, and/or
- (b) her membranes have been ruptured longer than 8-12 hours, or
- (c) other circumstances attend the case which increase potential infective hazards,

then the patient should have the protection of extra-peritoneal approach.

This rule has been adopted because our surveys have shown sharp increase in morbidity and mortality when these time limits are exceeded in the application of other types of operation.

When cases fall within the indicated limits of time and circumstances, transperitoneal approach is permissible and is somewhat quicker and simpler in technic.

The same surveys of our cases have demonstrated that the most generally satisfactory variety of transperitoneal section is the transverse lower segment operation as modified from Munro-Kerr by Phaneuf and others.

Among other *mechanical* factors characterizing labor difficulty for which we have performed section are a variety of conditions—each accounting for but a fraction of 1 per cent of the operations:

- (1) Rupture of uterus:
  - spontaneous
  - through old cesarean section scar
- (2) Obstruction by neoplasms:
  - fibromyomata
  - cancer of cervix
- (3) Obstruction by anomalies of soft parts:
  - congenital
  - resulting from previous surgery
- (4) Uterine inertia—rare as only factor, but frequently coexisting with feto-pelvic disproportion, and when it does, contributing importantly to the failure of spontaneous delivery.
- (5) So-called "cervical dystocia"—in my personal opinion hardly ever existing in the absence of neoplasm, post-operative cicatrices, etc. Should generally be recognized as feto-pelvic disproportion.
- (6) Anomalies of presentation.

In the above computation of frequency of indication, disproportion in breech presentation has been included in the general heading feto-pelvic disproportion. For we do not believe that breech presentation per se, in either primigravidae or multigravidae, warrants cesarean section. True, the extra hazard to the fetus in delivery of the aftercoming head is conceded. So we would resort to section in breech presentation in the presence of lesser degrees of disproportion than we would think proper in cephalic presentation. But section is resorted to only when we seriously estimate that feto-pelvic disproportion actually does exist.

There are three important *non-mechanical* obstetric indications for section:

(1) Placenta previa. This was the indication in about 8½ per cent of sections. But this was only 35 per cent of all our previas. So that section is not invariably necessitated by placenta previa. It is so indicated

- (a) When bleeding is very profuse and delivery



is not imminent;

(b) In central previa in the presence of an unprepared cervix, especially in primigravidae.

(2) Abrupton of the placenta. Cases exhibiting this condition must be individualized as to management. They may be roughly grouped as mild (63 per cent), and severe (37 per cent), depending on the amount of hemorrhage, and degree of shock present.

In the mild group, seven-eighths of them may be properly managed by expectant treatment. Forty-two per cent of them will deliver spontaneously, somewhat more by relatively simple artificial delivery procedures. We have applied cesarean section in about 12 per cent of this group, principally when the babies were alive, to save the babies and to anticipate in the mothers, the development of mild cases into severe ones.

In the severe group, 22 per cent will deliver spontaneously, and about the same number by simple artificial interference.

In this group we have taken the decided stand that cesarean section finds special application as a direct means of saving mothers' lives. We have shown this by direct comparison of our mortality with that of Irving, the most vigorous exponent of more conservative management. This comparison follows:

SEVERE GROUP

	CONSERVATIVE			CESAREAN SECTION /					
	CASES	DIED	MORTALITY PERCENT	CASES	DIED	MORTALITY PERCENT	CASES	DIED	MORTALITY PERCENT
Boston Lying-In-----	40	3	7.5	37	8	21.6	77	11	14.2
Mgt. Hague Mat. Hosp.-	23	2	8.7	33	2	6.0	56	4	7.1

Of course it almost goes without saying that the proper management of all abruptons must be implemented by the most modern and vigorous measures to quickly replace blood and combat shock.

(3) Toxemias and associated conditions. Eclampsia itself is not only an indication for section, but is definitely a *contraindication* unless there is a concomitant mechanical indication. But fulminant and increasing pre-eclampsia, hypertensive toxemia and nephritis not infrequently justify the operation to promptly terminate their effects on the mother,

and to salvage the baby.

Age of the mother in itself is not an indication for cesarean section. But in combination with other factors of difficulty it may *weight decision* to resort to section. Thus it would not be right to subject a forty-year-old primigravida experiencing perhaps her only chance of motherhood to the same margin of risk of fetal loss as might be justifiable in an eighteen-year-old girl. Section may be justified to save her from that risk.

Non-obstetric complications of pregnancy generally do *not* constitute valid indication for cesarean section.

Medical and surgical complications of pregnancy require appropriate medical and surgical treatment without disturbance of the pregnancy.

In some conditions, as in heart disease and tuberculosis, the duration and intensity of the medical treatment must be greater than in the non-pregnant. Even in operating for abdominal pathology late in pregnancy, the indicated surgical procedure must not be combined with surgical emptying of the uterus.

From what has preceded it is possible to reasonably postulate the contraindications to cesarean section as follows:

(1) We would wish to reemphasize that cesarean section, both in relation to the immediate event and

to the outcome of subsequent pregnancies, is *not* generally preferable to, or as good for the mother as natural birth through the birth tract, or such birth aided by relatively simple mechanical means. The obstetrician should therefor never employ it:

- (a) as a matter of his own convenience or because it may represent a larger fee than another type of delivery,
- (b) because the mother or her family desire and insist upon it. Such desire and insistence arise from ignorance of the factors already

dwelt upon in our discussion of the relative danger of cesarean section.

(2) Cesarean section should not be employed on the unsupported advice of internists and roentgenologists. Only the determination of a really qualified obstetrician, or a practitioner qualified by considerable obstetric experience, should decide the issue.

(3) Section should seldom be resorted to in any except extreme degrees of pelvic deformity or disproportion without some actual observation of the patient's ability to deliver herself by the natural passages.

(4) It should generally not be employed in *eclampsia*.

(5) It should generally not be used on the sole basis of concomitant condition, as heart disease, or acute surgical complications.

(6) Section should not be employed as a rule in small or previable babies, or in full term babies actually dead or exhibiting such a degree of distress as to make their survival improbable.

The conservative attitude indicated with reference to cesarean section might properly, in my belief, extend to other forms of operative obstetrics. A more or less just charge has been laid against American obstetrics in general, particularly as exemplified in hospital practice, of a too high incidence of unnecessary artificial or operative interference. I believe that when such interference is unnecessary it is meddlesome and pernicious.

What I have said of the term "elective" as applied to cesarean section is equally objectionable as applied to such procedures as version and forceps extraction.

Happily the wave of enthusiasm which swept American obstetrics for so-called "elective version" a few years ago has largely passed and hardly deserves discussion now.

But the so-called "elective" or "prophylactic" use of forceps, has taken strong hold on the consciousness of many obstetricians and is resorted to, in my own belief, far, far too frequently. It may be true that in the hands of a few gifted and extensively experienced men capable of estimating the exact conditions under which such work is carried out, this procedure may not be specifically harmful. But I am certain that in average hands, including not only general practitioners without great obstetric experience, but even in the hands of many supposedly qualified specialists, the recognition of status and

condition under which this operation is employed is too often inaccurate. Far too frequently unnecessary injury to the soft parts of the birth tract and to the tender contents of the baby's skull results.

In this connection, I think it is very, very wrong to apply absolute time limits to labor. So-called "rules" that the second stage must not be permitted to exceed a particular time limit is productive of much unnecessary and unwise interference. So long as a woman and her baby remain in reasonably good condition and can be maintained in such condition by appropriate supportive measures, the significance of the time elapsed in completing certain of the phenomena of the normal mechanism of labor is of small importance. No attempt should ever be made to limit the time occupied in the evolution of such phenomena by inflexible and arbitrary time limits. The spending of time to be sure that proper conditions for proposed artificial procedure are fulfilled is generally the wisest economy.

The question which the obstetrician should propose to himself in any case therefor is not, "What procedure shall I select by which to interfere in this case?", but rather "Is it necessary that I do anything to interfere with or modify the natural progress of labor?" That man will, I believe, be rendering best service to patients, who brings to their care in labor not a careless and neglectful assumption that everything will necessarily go well, but a generous amount of patience and a rigid self-interrogation as to the proven necessity, under the circumstances, of interference on his part with the generally beneficial and successful processes of nature.

#### SUMMARY

1. Historical status of cesarean section has changed in its modern application by reason of the refinement in surgical technic and broadening of indications. In general its use should not exceed 4 per cent of living births in large groups of obstetrical cases. The operation is still not devoid of considerable maternal risk.

2. The principal valid indication remains fetopelvic disproportion in broader degree than formerly.

3. Other valid indications include miscellaneous mechanical factors, and non-mechanical obstetric indications including placenta previa, abruption of placenta and certain toxemias.

4. Non-obstetric complications of pregnancy seldom justify cesarean section unless some of the other

factors indicated above as valid co-exist with them.

5. Section is *contraindicated*

a—for convenience

b—for fee

c—for patient's preference

d—for non-obstetric judgment

e—generally without test of labor

f—where baby is too small, previable, dead, or nearly so.

6. Conservatism is similarly necessary in respect to other artificial interference, as, for instance, version and forceps.

7. Inexpert estimation of proper situations and conditions for these procedures is fraught with

danger.

8. Time limits for particular labor phenomena are not valid and may lead to much unnecessary and harmful interference.

9. Obstetrician should ask himself, "It is *necessary* that I do *anything* to interfere with or modify the natural progress of labor in this case?"

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### Walter Reed General Hospital Opens Swimming Pool.

The second phase of a three-unit reconditioning program was completed recently when a new indoor swimming pool was opened at Walter Reed General Hospital, Washington, D. C.

The primary purpose of the new pool is to provide water therapy for patients. The first unit of the reconditioning program is a gymnasium, and the third is a reconditioning building, which should be completed by the end of this year.

### Twenty-Seven Hundred Doctors Released During September.

During September and the first four days of October, the Army Medical Department has separated 2,700 doctors from the service and by Christmas it is expected that 14,000 doctors will have been separated, Brig. General Raymond W. Bliss, Acting Surgeon General of the Army, stated recently before the House Military Affairs Committee. Through the months of July and August approximately 1,300 doctors were released.

General Bliss pointed out that in proportion to the Army's 45,000 doctors on VE-Day, there are now 43,000 in service, 2,000 of whom are recent graduates of medical schools. With the high hos-

pital load in this country, a large number of doctors are needed to staff hospitals and separation centers, which are now at peak operation. These centers require a total of 2,000 doctors.

Stating the approximate total of patients still in Army hospitals to be 400,000, General Bliss concluded, "You cannot treat patients without doctors. . . . According to the laws of Congress you cannot separate men without doctors. . . . By Christmas we will have reduced the number of doctors by at least 14,000, which represents more than 30 per cent of the total corps. At the same time, we will continue to meet our first and foremost responsibility to give the American soldier the best medical care that any soldier in any Army has ever received."

### The Winthrop Chemical Company

Has purchased a 60-acre site at Rensselaer, N.Y., on which they plan to have new research laboratories, costing more than \$2,000,000. Construction will begin in the Spring and it is expected to be completed within a year. This will replace the present laboratory facilities, but will have many improvements and be much larger. It is stated that 350 scientists will be employed exclusively on research, as compared with the present number of 175.



## HEARING AIDS, THE OTOLOGIST'S PROBLEM\*

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Before approaching the consideration of hearing aids, let us review briefly some of the elementary facts that we have learned about the hearing function and hearing loss.

Between the drum membrane and the membrane of the foramen ovale into which is fitted the footplate of the stapes the power of sound vibrations is multiplied sixty fold. Beyond the ovale window these intensified air vibrations are transformed into waves in the perilymph and endolymph, setting in delicate motion the more than 20,000 hair cells of the organ of Corti. Here the mechanical vibration of sound is converted into nervous energy or, perhaps, a form of electrical energy which is carried off from the organ of Corti along the fibres of the auditory nerve to the acoustic ganglion cells and thence to the hearing centers in the temporal lobe of the brain where the impulses are transformed into the sensation of sound. There is a close analogy between the function of hearing and the function of sight. The Great Planner has used a similar design but has varied the blue print to meet the diverse demands of the forces impinging on our senses. Even as light is broken up in the retina into its component wave lengths and then synthesized in the brain as color and form, so likewise are the sound waves of various cycles (frequencies per second) caught by the hair cells in the cochlea in its ascending spiral winding around the modiolus.

We have not yet fully penetrated the mystery of sound perception. We find that the basilar membrane, supporting and forming part of the Corti's organ is shortest at the basal turn of the cochlea and gradually lengthens as it winds upwards. We find that where there has been loss of high frequency tone perception the hair cells at the base of the cochlea show evidences of degeneration. And so we reason that this wonderful organ, consisting of an intricate pattern of microscopic cells and delicate membranes, is a sort of living keyboard with a tone scale capable of perceiving the highest pitched notes at its base and the progressively lower notes in descending octaves as the membrane lengthens and

becomes less tense in its upward spiral ascent. The sound of my voice as it strikes your ear drums consists of a great number of frequencies, by which I mean that it is not a one-pitch tone but a combination of many pitches having various frequencies or wave-lengths. Some are low frequency vibrations, and some are vibrations of higher and higher frequencies. The human ear has the power to perceive tones as low as 18 cycles per second and as high as 18,000 and more. That is a scale of eleven octaves whereas the piano keyboard has a range of something over seven octaves. However, we do not ordinarily use these eleven octaves of our hearing power. The tones of everyday conversation are compressed into the much narrower range of 250-4,000 frequencies per second though musical sounds go lower to 128 cycles and rise to over 8,000 cycles per second. Our ears are constantly being assailed by floods of sound. By far the greatest portion of these sound waves never pass the barrier of our delicately attuned sense organ. They are screened out. What goes through are the frequencies that are comprised in speech, in music—and all the sounds we live with.

All these cycles pass through the magic portals and are gathered together in our brain centers as living, understandable sound. Somewhere along this pathway there may be a break or an impediment and we recognize deafness or hearing deficiency. It is conductive deafness if there is an obstruction in the external auditory canal or a lesion in the middle ear affecting the drum or the ossicles—acute or chronic catarrhal or suppurative middle ear inflammations, a perforated ear drum or an intact ear drum with middle ear adhesions tying it down to the ankylosed ossicles. Or we may have otosclerosis with fixation of the stapes footplate and sponification of the labyrinth capsule.

In perceptive deafness which may exist *per se* or be an accompaniment of progressive conductive deafness we have degeneration of the sensory nerve endings in the cochlea or in the acoustic ganglion cells, in the fibres of the auditory nerve or in the hearing centers in the brain.

It is our business through careful history taking

\*Read by invitation before the Virginia Society of Ophthalmology and Otolaryngology in Richmond, April 28, 1945.

and painstaking examination to locate the lesion or lesions.

Upper respiratory infections are the most common causes of damage to the sensitive hearing apparatus, the exanthemata take their toll of infected middle ears. Many systemic diseases invade the inner ear and cause nerve deafness. Drugs like quinine and the salicylates often produce serious ill effects. The acoustic trauma induced by noisy industrial occupations and still more by the military hazards of high explosives and by the pressure effects of air warfare is a factor to be reckoned with more and more seriously as contributing to the ever-increasing number of ear casualties. We must study each case thoroughly and scientifically to ascertain the kind and degree of hearing loss. Does our patient suffer from conduction or perception deafness or the more common mixed type? How much residual hearing has he left and in which frequency areas? What can we do for him medically through nasopharyngeal and aural treatment?

At what point and on what grounds must we say to him: "You need a hearing aid to conserve the hearing remnant you still have and to save your speech from deteriorating because your brain does not receive many of the essential speech tones and will in time lose the memory and understanding of those sounds!" We must say to him or to her: "The longer you postpone the use of an hearing aid the more difficult it will be for you to adjust to it when you do get it. It will bring you back into a world of unfamiliar sounds and noises. You will have to be re-educated to understand those sounds again and to make sense of them. It will be like recalling a language that you have known long ago and forgotten. Moreover, you will hear many background noises that the ear normally disregards and ignores. the hearing aid will bring these noises to your ear along with the speech and music that your heart is craving to hear and will have lost the blessed faculty of screening out those sounds that your brain rejects. That faculty will come back to you after a while but slowly and painfully after much patience and self-education. So, "be well-advised," we say to our patient, "have yourself fitted with a suitable efficient hearing aid and save yourself much future trial and tribulation."

That is sound advice but we have to back it up with a complete analysis of the case. We are delinquent in our professional duty if we say to the

patient with an otosclerosis or any form of progressive deafness, be it middle or inner ear: "Go and get yourself an hearing aid," and so wash our hands of the case. The competent otologist will give that deafness case as diligent and conscientious a check-up as if his own precious hearing were involved. Today we are derelict as physicians and as otologists in our duty to these 15 million of our people, men, women and children, who have definite loss of hearing in one or both ears. Most of them do nothing about it and seek to hide the sign of their affliction as if it were a thing of shame. Some go to the salesmen and the department stores for the advice and help that we alone are scientifically equipped and legally empowered to give. This is not said in criticism of the men who make and market the wonderful little instruments that are available today. It is at my own profession that I am pointing the finger of blame. We are not yet fully awake to the duty and responsibility that is ours.

During World War I, hearing casualties totalled about 50,000. In this present far more terrible conflict it is conservative to estimate that probably a quarter of a million men will have suffered partial or total loss of hearing.

The problem will be ours to solve. On our profession will fall the burden of the task to help and rehabilitate these casualties as well as the increasing number of civilians who are becoming more and more conscious of their hearing disabilities through press and radio propaganda. This publicity, sponsored largely by the hearing aid manufacturers serves a highly useful purpose in breaking down the resistance of most people to wearing a device that would advertise their defect. However, like most lay publicity concerning human ailments there is a great deal of misinformation and distortion of fact which it is our professional duty to correct.

Recently the reports of the fenestration operation appearing in the lay press have aroused a high degree of popular interest. It is stated that the largest percentage of deafness is due to otosclerosis and can be cured by the fenestration operation. The hazards and uncertainties of the operation are minimized by these lay reporters. The public is led to believe that a simple operation has been devised and that it is a cure-all for most cases of deafness.

Actually, as we know, otosclerosis is not the larger percentage of the total number of the hard of hearing. By far the greatest number have lost their



hearing from many other causes, infective, traumatic and systemic. Moreover, the indications for the fenestration operation are limited to a restricted number of selected cases where the nerve function has not been seriously affected. This rules out the vast number of perceptive deafness cases as well as the mixed type of hearing loss. Furthermore, the hearing improvement in these selected cases is an average of 24 decibels in 80% of those operated on. It is interesting to note here that suitably fitted hearing aids in cases having not more than 50% hearing loss will show an average improvement of 35 decibels or better. And this group is vastly greater than those amenable to operation. But we are not here discussing the fenestration procedure with its necessarily limited scope and inevitable surgical hazards. For the far larger proportion of our deafened people, civilian and military, aged and young, we have the boon of science in the form of the electronic vacuum tube hearing aid which can bring the blessing of better hearing to at least three million of those involved.

How do we ascertain which patients should or should not wear an hearing aid?

By a complete examination consisting of:

1. The history of the case, and I need not tell you, my colleagues, what that signifies. It should bring out every fact, familial or personal, that might shed light on the origin and nature of the trouble.
2. An examination of the nose, throat and ears that would uncover any pathology or abnormality.
3. The use of the tuning fork tests, especially the Rinne for the comparison of air and bone conduction, the Schwabach for the measurement of actual bone conduction and the Weber for lateralization.
4. The audiometer test which tells us more precisely the degree of deafness as well as the frequencies involved.

No hearing aid can or should be fitted without a carefully prepared audiogram. There are department stores and opticians who sell hearing aids as if they were spectacles to be bought over the counter. That is a pernicious practice which we have to combat by publicity, by education and by legislation.

The audiogram must not only be carefully charted but also very judiciously interpreted.

A conduction deafness will give us an air con-

duction loss in the lower tones, an increased or normal bone conduction in these tones, while the higher tones or pitches are unaffected. In perception or nerve deafness we have a loss in the higher frequency tones. Most cases show various combinations of low and high tone loss depending on whether the lesion is in the middle or inner ear or the nerve pathways. The frequency loss is measured in terms of decibels, and a decibel, to put it simply, is the minimum intensity of sound to cross our hearing threshold.

The two curves—air and bone—give us a clear picture of the nature and degree of hearing loss and in what regions of frequency there is still usable residual hearing. A very quiet or preferably a sound proof room is essential for making an accurate and altogether dependable audiogram. There may be a difference of 20 decibels in charts made in sound proof rooms as compared to the ordinary office. That is particularly important in the controlled speech tests which should be given before and after fitting the hearing aid. Needless to say, most hearing aids are sold today without such painstaking and precise scientific conditions, and that may be the reason why so many aids are discarded after a few weeks or months by disappointed and discouraged purchasers.

There are several vital questions that we expect to clear up by the study of our audiogram and we must feel that we can rely on its testimony. Is the hearing deficiency sufficient to warrant the use of an aid? Experience has taught us that where there is less than 25% hearing loss in each ear the instrument is not indicated. Also, where there is a loss of 75% or over a hearing aid will rarely prove of any value and we must resort to lip reading. As unbiased physicians we are in a position to give such essential advice. We have no commercial axe to grind. We are also called upon to decide which ear to fit and whether to employ an air conduction or a bone conduction receiver. The ear with the poorer hearing should always be fitted providing this ear can be improved by at least 35 decibels and also if the better ear still has some serviceable residual hearing. This gives us the advantage of binaural function. However, if the poorer ear is below the level of possible improvement we fit the better ear.

Air conduction receivers are indicated in the vast majority of cases. Bone conduction receivers should be used only where there is a discharging ear or



where the bone conduction is more than twice the strength of the air conduction; or to put it in another way, where the air conduction is about 40 decibels lower than the bone conduction.

The importance of making a careful bone conduction audiogram need not be stressed before this group. It is well known that lessened bone conduction signifies pathology in the inner ear. It is unfortunate that little or no attention is paid to the bone conduction by the hearing aid salesmen. In the final analysis it is the comparison between the air hearing and the bone hearing graph that gives us definite indication of what to advise.

And now for a brief word about the hearing aid itself. Essentially it is a telephonic or radio contrivance designed to intensify the volume of sound reaching the ear. It is indeed a far cry from the ear trumpet and speaking tube of a past generation. In the modern hearing aid the sound waves are first converted into electrical energy in the transmitter. Here there is a microphone in which a diaphragm is set in vibration by the sound waves; these vibrations are transformed into electrical energy by the action of the crystal in the microphone. The electrical energy is amplified by the midget vacuum tubes using the current supplied by a 15 volt and a 45 volt battery. This amplified electrical current is carried by the cords to the receiver where a diaphragm and a coil-enveloped magnet convert the electrical energy into mechanical vibrations again. These produce the sound waves which enter the ear canal through the ear piece connected with the receiver. The hearing aid is a marvelous little precision instrument. It does not merely intensify the sound, it can also select the frequencies that require amplification and attenuate the other frequencies that need to be soft-pedalled. Most selective amplification is in the area of higher frequencies—from 1000 to 3000 cycles—the consonant area so vital to intelligible speech. The lower frequencies play a much lesser role in speech production and here the amplification must be reduced. Common noises are in the lower cycle region and must be dampened to avoid their masking the more delicate tones in vocal and musical sound.

It is these higher frequencies that suffer in perceptive or inner ear deafness as well as in the large group of mixed conduction and perception hearing loss such as we find in the progressive deafness of old people.

In summary, the fitting of the hearing aid must select the area of residual hearing that requires amplification. It is accomplished on the basis of the audiogram as well as the controlled speech test in a very quiet or sound proof room. The modern vacuum type of hearing aid is equipped to provide this selective amplification by various delicate adjustments for frequency, tone control and sound volume. But the matching of these adjustments to the individual characteristics of the patient's hearing is more than half the battle. It calls for the knowledge and experience of an otologist plus the special training and skill acquired in the study and application of these magic little instruments.

May I digress for a moment to remark that if this sounds like a lot of time and trouble it is regrettable that there is no royal road to an adequate and dependable hearing aid fitting. May I humbly suggest to my beloved, adopted State of Virginia that with its two splendid medical schools with their magnificent hospital facilities it is entitled to have and should have a deafness prevention or hearing aid clinic to which we could send our hard-of-hearing patients—indigent and paying—for consultation and scientific fitting.

In the course of my investigation and survey of the present hearing aid situation I have come to realize more strongly than I ever did before that our problem, the otologists' problem, is not just the question of hearing aids but the entire field of defective hearing. These things are being highly publicized, in lay periodicals, over the radio and through the advertising and high-pressure salesmanship of the hearing aid manufacturers.

We are being asked about the resounding claims that are being made for the fenestration operation and it behooves us to know and weigh the evidence and to steer our patients away from the choppy sea of sensationalism into the harbor of truth and fact. People are being told fantastic tales about what hearing aids will do for their deafness. We otologists must give the answers or they will be given—and are already being given—by those honest well-intentioned citizens who have something to sell.

This is an era of marvelous advances in medical science. How blessed are the younger men who have these new tools and instrumentalities for the alleviation and cure of human ills. And how pleasant it is for us older men to contemplate these phenomenal changes, to compare them with the less adequate

means at our disposal in the past, and to feel that we are still here to share in these medical triumphs and to benefit our patients through their use. In otology we marked time for decades. Our advances lay rather in retrenchment and growing conservatism. In the field of hearing deficiency we felt baffled and beaten. We gave routine treatments in which we had little faith and from which the patients derived little or no benefit. During the last ten or fifteen years we have gone ahead far beyond anything we dared to hope or dream. Magic new drugs have banished the spectre of therapeutic nihilism from our thinking and doing. The incredible advances in radio and electronics which have been applied in the field of hearing aids have dispelled the shadow of silence and isolation from

countless thousands of deafened men, women and children. There is no greater human tragedy than loss of hearing. Silence may be golden if we are not condemned to it everlastingly. To be cut off from living sound is to sit alone and to walk alone and to be denied that warm and vital communication which only the voice and the hearing can provide. So we older otologists who have gone through years of helplessness and frustration in our endeavors to alleviate the wretchedness of deafness can best appreciate the wonderful new devices put into our hands by science. We must thoroughly understand these little precision instruments; we must contribute to their perfection, and it is our task as otologists to apply them to meet the needs of the hard of hearing.

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### Bad Posture Undermines Health.

Poor posture is ugly, fatiguing and damaging to the health, according to the October issue of *Hygeia*, the health magazine of the American Medical Association.

Jerome S. Peterson, M.D., district health officer in New York City's Department of Health and an associate of the Long Island College of Medicine, cautions that "poor health, depressed mental attitude and bad posture seem to go together."

Poor posture is usually associated with sloppy habits, laziness and inefficiency whereas the healthy, happy and successful person is always pictured as one who walks with head erect and chest out. Moreover, bad posture will throw the body out of alignment and may do serious damage to the internal organs as a result of unnatural compression. Thus, not only your health and appearance are affected, but poor posture is usually taken as a reflection of your personality.

Dr. Peterson's formula for improving the posture is: "Stand correctly; stand as tall as possible with-

out rising on your toes. Get your feet a few inches apart and point your toes forward. Hold your head up. Bring the chin in. Your chest should be up. The lower abdomen should be in and flat, but don't strain yourself and don't become stiff. Let your hands hang loosely at your sides. Be conscious of your posture, but try to be relaxed at the same time."

### Most of Pacific Casualties to Be Home by Christmas.

Most of the 3,000 battle casualties still remaining in the Pacific will be returned to the United States within sixty days, and all other transportable casualties are expected to be home by Christmas, according to a recent announcement by the War Department.

Some Army hospital ships are being shifted from the Atlantic to help speed up the transportation of sick and wounded from the Pacific area, increasing the present total of Pacific-operating hospital ships to twelve. However, a number of ships are to be kept in the Atlantic to meet the needs of occupation forces.

## SOME OBSERVATIONS IN THE CLINICAL USES OF PROSTIGMIN\*

C. P. JONES, JR., M.D.,  
Newport News, Virginia.

Prostigmin has been used in the past mostly by the surgeons. Only relatively recently has its applications in other conditions opened another field of its usefulness. Chemically prostigmin is pharmacologically and physiologically related to physostigmin.

Its use in the field of obstetrics as a diagnostic aid of pregnancy is being well established, and its reliability has become so dependable that it has as high an accuracy as other more complicated procedures. In the absence of pelvic pathology and endocrine imbalance, the absence of the menses can be very quickly terminated by the simple injection of prostigmin methylsulphate, intramuscularly, either daily or every other day. Every case that I have used it on, with no pelvic pathology where menses failed to appear, was pregnant. It can be used with impunity, speaking from my experience and that of others. It will not cause abortion even in the earliest periods of gestation.

There are several methods of explaining its actions. However, I think one of the most logical is that of Carapetyan. We know that for cyclic menstrual bleeding there must be a hyperemia of the uterine tissues. Estrogens and estrogenic-like substances release acetylcholine, and, in turn, acetylcholine produces hyperemia of the uterus.

There are non-specific agents that have as their action the potentiating of acetylcholine. Prostigmin apparently has just such properties. On this basis, I have justified my use of the drug in cases of simple amenorrhea for relief of premenstrual congestion and as an early diagnostic agent for pregnancy.

*Case 1.* Mrs. G. D., white, female, age 23, was seen on May 28, 1943, complaining of pain in sides and female trouble. Examination showed enlargement of uterus. Impression was due to possible pregnancy. Patient was seen two weeks later on June 11, 1943. Examination confirmed pregnancy. The patient was given 1 c.c. prostigmin, which was repeated June 12, 1943 and June 14, 1943. There were no signs of the menses. The patient was diag-

nosed as pregnant and delivered eight months later, N.S.D.

*Case 2.* Mrs. R. S., white, female, age 28, was seen on June 15, 1944, with history of L.M.P. April 30, complaining of pre-menstrual cramps, but no signs of menses. Pelvic examination revealed no pathology. The patient was given 1 c.c. prostigmin, and told to return in two days. The patient called back by phone to report menses started within 12 hours after injection.

*Case 3.* Mrs. L. T., white, female, age 32, came in September 9, 1944, with history of delayed menses of two weeks and with pre-menstrual cramps and discomfort. She was given 1 c.c. prostigmin. Menses started with 24 hours.

*Case 4.* Mrs. L. M., white, female, age 30, was seen for the first time June 16, 1944, with history of L. M. P. 6 weeks previously. This patient was delivered the year before, N.S.D., the menses having been irregular ever since. The patient was given 1 c.c. prostigmin every 4 days for 4 injections with no recurrence of menses. Six weeks later examination proved pregnancy of 2½ months.

*Case 5.* Mrs. H. L., white, female, age 28, was seen for the first time on June 10, 1944, chief complaint being the absence of menses for five weeks. There was no pelvic pathology. She was given 1 c.c. ampules of prostigmin every other day. After delay of 10 days, normal menses returned and have been regular since.

*Case 6.* Mrs. R. P., white, female, age 43, was seen on September 18, 1944, with history of L. M. P. July 26, 1944. The patient was a fat, multiparous individual on whom pelvic examination was unsatisfactory. The patient was given 1 c.c. prostigmin on September 20 and 23. The patient was not seen again until October 25, 1944, at which time a diagnosis of pregnancy was made.

In two cases of mine in which there was gall bladder tract pathology, I was able to get considerable relief of pain, intestinal distention, and just plain nausea and vomiting. The possible action is that it overcomes intestinal distention that is caused by the gall bladder itself.

Both of these patients were failures as far as medical therapy was concerned. However, with

\*Read before the Seaboard Medical Association of Virginia and North Carolina at Wilson, N. C., December 5-7, 1944.



prostigmin the pain and abdominal discomfort were markedly improved. Possibly in border-line cases of surgery, or those in which surgery at any specific time is inadvisable, this may be the procedure of choice. There are times when there is a reflex action set up by a poorly functioning gall bladder. Through some action prostigmin blocks this, and relief, temporary in nature, is set up.

*Case 1.* Mrs. R. J., white, female, age 36, was seen with typical gall bladder pain, discomfort, intestinal stasis and vomiting. She had a previous history of gall bladder removal on October 28, 1943, with returns of symptoms as stated above on April 20, 1944. In view of the history of gall bladder removal the patient was treated unsuccessfully throughout the following months, up to October 6, 1944. At this time she was given 1 c.c. prostigmin and prostigmin bromide 15 mg., tablets 1 t.i.d. The 1 c.c. prostigmin by hypodermic was given every other day, giving her almost complete relief of pain, nausea and vomiting. Up to October 6, 1944, an effort was being made to prepare patient for exploratory laparotomy. In spite of relief of symptoms, the exploratory laparotomy was proceeded with as planned. A mass of adhesions binding the stomach to area of gall bladder stump was found and freed. It is interesting to note that in spite of all the surgical adhesions causing a partial obstruction, the patient obtained extremely satisfactory results from prostigmin.

*Case 2.* Mrs. L. J., white, female, age 43, came in on June 3, 1944, with typical history of gall bladder discomfort and complaint. She was tried on syntropan, bilron, and gall bladder diet, with no marked change of symptoms. She was checked again on June 8, 1944, and the same symptoms were found. The patient was seen on June 10, 1944, and given 1 c.c. prostigmin which was repeated on June 12, 1944, with the result that the patient's symptoms disappeared. The patient returned on October 25, 1944, with recurrence of symptoms and was given 1 c.c. prostigmin on 25th, 27th and 31st, with relapse of abdominal pain and gall bladder discomfort.

A possible new field may be opening up in the use of prostigmin for sprains and spasms and trauma, especially low back muscular spasms due to strains and trauma, in absence of fractures or bone pathology. I have had considerable relief in a short period of time by use of prostigmin. It has been

described to me as an ironing out of the pain. The typical case comes in complaining of pain in the back with history of fall, wrenched back or strained back. When examination eliminates any pathology but muscular spasm, I strap the back and give 1 c.c. prostigmin every other day for 3 to 6 doses. Supplemental maintenance medication is given in the form of prostigmin bromide 15 mg. t.i.d. The clinical response is most dramatic within the first few hours.

*Case 1.* Mr. N. M., white, male, age 30, was seen on November 6, 1944, complaining of severe pain in lower back for five days. His history revealed no traumatic injury. The back was strapped for relief. The patient was given 1 c.c. prostigmin and tablets of prostigmin bromides, 15 mg. t.i.d. and plain aspirin. On November 8 and 10, 1 c.c. ampule of prostigmin was given. The patient noted improvement and stated that within a few hours his back felt easier, cool and relieved. The patient was discharged on November 12, 1944, cured.

*Case 2.* Mrs. J. B., white, female, age 40, came in on July 29, 1944, with history of arthritic-like pains in joints and lower middle back. The patient was given 1 c.c. prostigmin then, and again on July 31 and August 4. A maintenance dose of prostigmin bromide of 45 mg. a day was given to patient. This patient obtained only moderate improvement and some relief of pain. However, since her husband was in the Navy, she transferred to the Naval Hospital in Norfolk.

*Case 3.* Mrs. M. W., colored, female, aged 28, was seen for the first time on October 31, 1944, complaining of severe low back pain. Examination revealed no pathology, and the kidneys were negative. Her back was strapped and she was given 1 c.c. prostigmin and 15 mg. prostigmin bromide t.i.d. The patient was also given ten capsules A.S.A. with codeine gr.  $\frac{1}{4}$ , on first visit, to be taken every six hours. Additional injections of prostigmin were given on November 3, 6, and 8, with result of considerable relief of spasm and pain. Improvement followed within 2 hours of first injection, and continued improvement followed each injection. The patient was discharged on November 10, 1944, cured.

*Case 4.* Mr. W. W., white, male, age 57, was seen on September 17, 1944, complaining of low back pain, with history of straining back by means of heavy lifting. The patient was given an injection of prostigmin on September 18, 20 and 23, along

with a daily maintenance dose of prostigmin bromide 45 mg. The patient was entirely relieved of symptoms and was discharged September 25, 1944.

*Case 5.* Mrs. V. R., white, female, age 33, was seen for the first time on July 31, 1944, with low back pain and a history of straining back with lifting. Examination revealed no pathology, and kidneys were negative. She was given prostigmin 1 c.c. and prostigmin bromide 45 mg. daily. On August 2, 1944, a second injection of prostigmin was given. A maintenance dose of 45 mg. prostigmin bromide was continued for 10 days. She was greatly improved after 2 injections and was discharged on August 12, 1944, cured.

*Case 6.* Mr. D. Y., white, male, age 34, was seen for the first time on September 13, 1944, when he gave a history of strained back. Examination revealed no pathology. He was given 1 c.c. prostigmin and was greatly relieved and improved. The patient was discharged on September 15, 1944.

*Case 7.* Mr. T. R., white, male, age 30, was seen on July 26, 1944, for the first time. He gave a history of pain in lower back. The examination was essentially negative. He was given prostigmin 1 c.c. and prostigmin bromide 45 mg., and, in addition, salicylates, grains ten, every four hours. He was seen again on July 28, 1944, at which time another ampule of prostigmin was given. The patient stated that prostigmin eased the pain in his back immediately, but after a few hours the pain returned, slowly. This was improved by prostigmin on July 28 and strapping of his back.

*Case 8.* Mr. R. B., white, male, age 30, was seen for the first time on October 30, 1944, giving history of strained back. He was given 1 c.c. prostigmin and 15 mg. prostigmin bromide t.i.d. The patient was seen again on November 1, 1944, and his back was strapped, due to the necessity of his returning to work. An ampule of prostigmin was given. On November 3, 1944, another ampule of prostigmin was given. The results were fair in this case, as the patient returned to work. The patient stated that he had definite feeling of relaxation of spasms in his back.

*Case 9.* S. J. colored, male, age 65, was seen for the first time on October 2, 1944, complaining of backache. Examination revealed most of the symptoms were due to old rheumatoid arthritis. The patient was given 1 c.c. prostigmin and prostigmin bromide 45 mg. daily, and salicylates in the form

of salicylonyl, drams 1, every 6 hours. He was seen again on October 4 and 6 and 1 c.c. prostigmin was given. The patient states the injections definitely helped him and eased the pain in his back. He was financially unable to continue injections.

*Case 10.* P. M., colored, male, age 28, was seen for the first time on September 13, 1944. He gave a history of traumatic back injury due to lifting heavy basket of drugs and supplies. Physical examination revealed no fracture or pathological disturbance. The patient was given 1 c.c. prostigmin and prostigmin bromide 45 mg. daily, and back was strapped. This patient got excellent results, the pain easing within 3 hours after the first injection. Maintenance dose of prostigmin bromide was supplemented every other day by 1 c.c. prostigmin. This patient did well and was given 8 injections—one every other day—and was about able to return to work when he made a false step and fell, causing terrific muscular spasm and pain in his back. This was remarkably improved by additional prostigmin and prostigmin bromide and patient was able to return to work in two weeks. This same case had a similar back injury two years previously when he was away from work for three months. This happened to be a compensation case in which his salary was paid as long as he was out of work; however, the patient was so improved that he preferred to return to work.

*Case 11.* Mr. R. K., white, male, age 43, was seen for the first time on November 1, 1944. Six years ago this man had a removal of the left leg at six inches above the knee joint and has an artificial limb. On October 30, 1944, he had a terrific fall with his whole weight going on the shoulder girdle. He had spasms of biceps, triceps, deltoid, pectoralis major and minor muscles. He was given prostigmin 1 c.c. on November 3, 6 and 8, at the end of which time he had free movement of arms, shoulders and all muscles involved in the shoulder girdle. Marked relief was noticed within a few hours after the first injection.

#### SUMMARY

Prostigmin methylsulfate 1:2000 is a 1:200 solution of dimethylcarbamic ester of m-oxyphenyltrimethylammonium methylsulfate. It was introduced as an aid to help in stimulating intestinal peristalsis. However, its use has been extended and it is of definite help in many fields outside of surgical service. It is of use in obstetrics, gynecology, ortho-

pedics, internal medicine and others.

1. It is a diagnostic test for pregnancy.
2. In two cases of gallbladder pain it was of definite benefit in relieving pain, distension and discomfort.
3. In low back pain, with muscular spasm, it is of specific help.
4. It is not curative in cases of actual pathology

of the back, such as bony changes, fractures or disease, but is of help in relieving spasms of back muscles.

5. The possible action is that prostigmin acts in some manner at the myoneural junctions to potentiate the normally occurring acetylcholine presumably by an inhibiting action upon the cholinesterase.

3117 West Avenue.

### New Books.

Recent additions to the Library of the Medical College of Virginia include the following, which are available to our readers under usual library rules:

- Advances in enzymology. v. V. 1945.  
 Appel-Strecker—Practical examination of personality.  
 Bailey—Notable names in medicine and surgery.  
 Baker—Traphagen—Behavior-problem children.  
 Binger—The doctor's job.  
 Criepp—Essentials of allergy.  
 Crocker—Flavor.  
 Cyriax—Deep massage and manipulation illustrated.  
 Fishbein—Doctors at war.  
 Graham—Earth and high heaven (a novel).  
 Hartnack—Unbidden house guests.  
 Haymaker—Peripheral nerve injuries.  
 Herrell—Penicillin and other antibiotic agents.  
 Hingson & Lull—Control of pain in childbirth.  
 Howell—Speed in animals: their specialization for running and leaping.  
 Jameson—Gynecological and obstetrical tuberculosis.  
 Krieg—Functional neuro-anatomy.  
 Krueger—I was Hitler's doctor.  
 Lull—Control of pain in childbirth.  
 Munoz & Charipper—The microscope and its use.  
 Musser—Internal medicine, its theory and practice. 4th ed. 1945.  
 Ochsner & Mahorner—Varicose veins.  
 Philanthrops—Physiological cruelty.  
 Philosophers look to scientists.  
 Quinn & Jones—Carbon dioxide.  
 Riviere—Un demi-siecle de Psychotherapie.  
 Rycroft—Manual of ophthalmology for medical officers.  
 Sahyun—Outline of the amino acids and proteins.  
 Sedges—The Townsman (An American novel).  
 Sherman & Lanford—An introduction to foods and nutrition.

Stitt's—Diagnosis, prevention and treatment of tropical diseases.

Thienes—Pharmacology for students and practitioners.

Winton & Winton—Food analysis.

### Tuberculosis and Syphilis

Are the two most important health problems of liberated Manila, according to information released by UNRRA. Based on returns for the first three months of liberation, the death rate for pulmonary tuberculosis as for a year has been calculated at 800 per 100,000 inhabitants, or about twenty times that of the average American city. In ten weeks, 2,045 new syphilis cases were found among the civilian population, and the incidence continues to increase. Gonorrhea is equally prevalent. Manila was one of the few cities of tropical Asia where malaria had been reduced to a low level. During the Japanese occupation the disease returned and it now constitutes a serious problem. There has been no significant increase of other epidemic diseases.

War-shattered cities in continental Europe are also suffering from serious epidemics. Pulmonary tuberculosis mortality has more than doubled in Rome. Epidemics of bacillary dysentery of a severe type and of typhoid fever are spreading in Berlin, where diphtheria, too, is once more on the increase. There were 1,100 cases of typhoid fever during the first three weeks of August. At Helsinki, Finland, there have been 2,472 paratyphoid fever cases up to September 6. Diphtheria remains widespread in the Netherlands where now one-half of the cases occur among adults.



## OBSERVATIONS ON LOEFFLER'S SYNDROME—REPORT OF FOUR CASES

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Richmond, Virginia.

The purpose of this paper is to present the result of a study of a symptom complex which was first described by William Loeffler<sup>1</sup> in 1931. The European literature since that time contains many articles dealing with this syndrome. René Cohen<sup>2</sup> reported in 1936 that the condition was rare and then recorded a series of one hundred cases, of which Loeffler himself had seen fifty-one.

A review of the literature discloses a paucity of reports from this side of the water compared with those reported from European sources. It seems odd that American authors have seen so little of, or failed to report, a symptom complex which is apparently quite prevalent in Switzerland and the rest of Europe.

Loeffler, after his first report in 1931, again wrote on the subject in 1932, and at the reunion of the Swiss Medical Society at Zurich, in 1936, reported fifty-one cases, which were over half the number reported by all of the authors up to that time.

From Loeffler's description of the syndrome it is quite clear-cut, easily carried in mind, and should offer no particular difficulty in diagnosis. The benign clinical features (mainly cough), together with the extensive X-ray shadows and the blood eosinophilia, could hardly fail to attract the attention.

The X-ray shadows, which are described as pulmonary infiltrations, vary greatly, being regular or irregular, unilateral or bilateral, large or small.

The percentage of eosinophils in the blood stream is increased, but quite variable, ranging from 10 to 69, and seems to bear no relation to the amount of pulmonary infiltration. Loeffler first observed the condition while studying X-ray films of tubercular patients, and was of the opinion that tuberculosis was an etiological factor. He also mentioned the possibility of allergy as a cause. It is to be regretted that many European reports are not more detailed—only twenty-five per cent of the reports, according to R. Freund and S. Samuelson,<sup>3</sup> contain complete data, a statement verified by our review of their reports.

Reporting from Jerusalem, Palestine, the above authors present a thorough study of one case of

Loeffler's syndrome and also tabulate all of the cases occurring in Europe up to 1940, totaling one hundred and five. From this record, it is obvious that, from 1936 to 1940, only five cases were added to the literature; while from 1931 to 1936 there were one hundred cases reported. This seems strange. It is also interesting to note from their tabulations that, of the one hundred and five cases reported, eighty-eight were divided among four men: Loeffler—51; Geiger—15; Wild—14; and Leitner—8. Twenty-seven were reported by eight other authors.

Bertil Soderling,<sup>4</sup> of Sweden, has recorded a case of a child with Loeffler's syndrome. He goes into the subject very fully and is inclined to believe that although Loeffler first described the condition in 1931, D. Engle,<sup>5</sup> of Shanghai, China, in 1935, made the most significant contribution to the literature in his description of "Privet Cough", an epidemic disease occurring in that country.

The above author describes an epidemic form of "Privet Cough". He was himself a victim of the disease. His blood count showed a marked eosinophilia, and X-ray films revealed massive lung infiltrations, the first of which cleared in one day and again in six days. In his opinion these cases of "Privet Cough" were in reality Loeffler's syndrome. He stated that the patients in his series complained of a metallic taste from the sputum. The epidemic occurred in May and June.

James H. Smith,<sup>6</sup> in 1943, reported a case of Loeffler's syndrome. His case occurred in the summer and had severe asthma. One outstanding feature was the high eosinophil count, on one occasion as high as 69 per cent. He emphasized the similarity of the X-ray findings to those in tuberculosis. F. Parks Weber,<sup>7</sup> of England, reported in 1938 a case of Loeffler's syndrome in a ten year old boy, which occurred in the summer and was associated with *Ascaris lumbricoides*. The lung infiltrations cleared with the riddance of the intestinal parasites.

A. A. Karan and Emanuel Singer<sup>8</sup> reported, in 1942, five cases of transitory pulmonary infiltrations mistaken for tuberculosis. These cases were sent to a tubercular sanatorium before they were diagnosed.

James F. Slowey,<sup>9</sup> in 1944, recorded a case of Loeffler's syndrome associated with *Trichina spi-*

Read before Richmond Academy of Medicine, January, 1945.

ralis and gives a very full review of the subject with the main emphasis on trichiniasis as a cause.

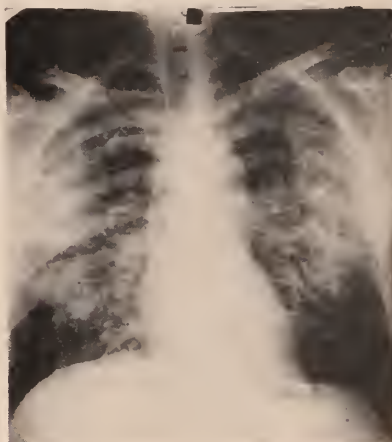
Amanda Hoff and Mason Hicks<sup>10</sup> report a typical case of Loeffler's syndrome associated with *Entamoeba histolytica*, which responded to emetine hydrochloride therapy—the lung infiltrations and eosinophilia yielding to the drug therapy. They give a very excellent review of the literature and show a most complete study of their case.

Pirkle and Davin<sup>11</sup> present a case of pulmonary infiltration with eosinophilia, the outstanding feature being the length of time required for the disappearance of the lung shadows. O. C. Hansen-Pruss and E. G. Goodman<sup>12</sup> report six cases which they wish to classify as "Allergic Pulmonary Consolidations".

Stewart H. Jones and Carlton R. Souders<sup>13</sup> reported one case of Loeffler's syndrome and show a thorough review of the literature on the subject.

vealed eosinophilia of the bone marrow and of the blood. Evidence is presented that there is not only a bronchogenic, but also a hematogenic involvement and that eosinophilic infiltrates occur, not only in the lungs but also in other organs. There is evidence of a possible relationship between epididymitis and pulmonary infiltration. His studies showed no evidence of bacteriologic infiltration. The author concludes that eosinophilic pulmonary infiltration is an inflammatory, allergic reaction to various allergens which may enter the body by various routes.

Kartagener<sup>15</sup> states that "the earlier assumption that edema or atelectasis is the underlying anatomic change in Loeffler's syndrome has been superseded by Von Meyenberg's investigation." The author maintains that these infiltrations represent eosinophilic pneumonia. Transient lung infiltrations with eosinophilic elevation should be designated as eosin-



1—*a.* X-ray of chest of Case I taken on December 28, 1943.



*b.* X-ray of chest of Case I taken three months later, March 28, 1944.

They also stated that in a recent army discharge of six thousand, five hundred men, chest X-rays were done, and eleven showed pulmonary infiltrations.

The only author who describes the pathology of the disease is H. Von Meyenberg,<sup>14</sup> who reports four autopsied cases. He considered it a benign disorder. Three of these cases died as the result of military accidents, the fourth of traumatic tetanus of short duration. The gross pathology reported consisted of dense, airless foci, the size of a plum and cherry, respectively. They were believed to be ordinary bronchopneumonic foci. Microscopically the study of the pulmonary tissue revealed a large number of eosinophils, while examination of other tissues re-

vealed eosinophilic infiltration of type Loeffler. Kartagener describes a case which he thinks represents a third type of eosinophilic infiltration. This form is characterized by chronicity and mildness of symptoms.

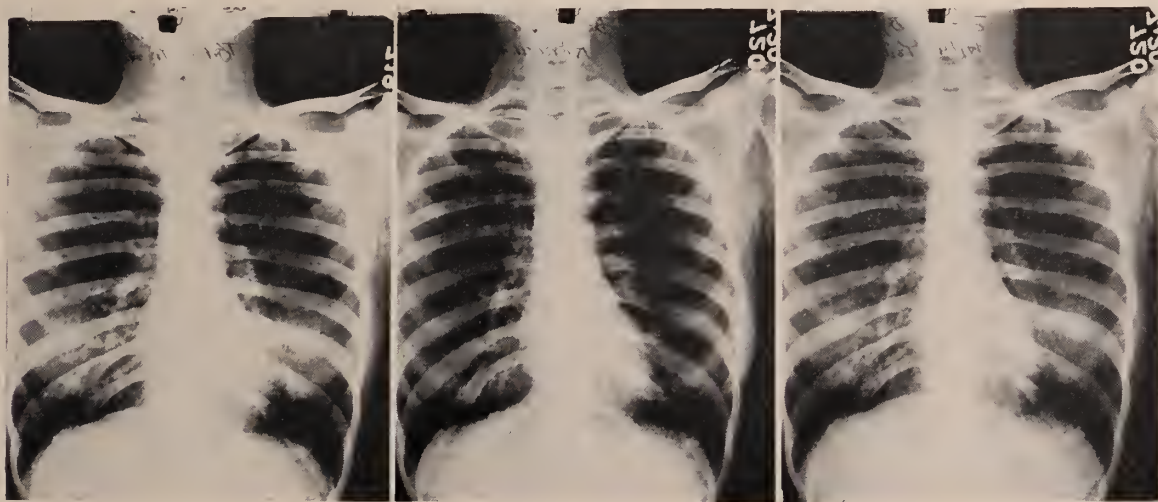
We wish to report four cases with X-ray films of each:

*Case I.*—A fifty-seven year old white male complained of cough and difficult breathing. He gave a history of asthma and hay fever and related that his mother was afflicted with the same disease. Five weeks before he had been seized with a chill, cough, and high temperature, which had necessitated his being in bed for four weeks. He feels quite well now except for weakness.



On physical examination there was marked dullness to percussion over both right and left chests posteriorly; there was bronchial breathing and an occasional moist rale. The remainder of the physical examination was negative. The laboratory data revealed: red cell count 5,050,000; hemoglobin concentration 100 per cent; white cell count 8,500; neutrophils filamented 56 per cent, non-filamented 6 per cent; eosinophils 2 per cent; lymphocytes 35 per cent; monocytes 2 per cent. Sedimentation rate (Cutler) 15 mm. in 1 hour, blood sugar 110 mgm.

upper and lower chest. There was definite wheezing, typical of asthma. Laboratory examination of the blood yielded the following data: red cell count 4,650,000; hemoglobin concentration 93 per cent; white cell count 7,050; filamented 40 per cent; non-filamented 9 per cent; eosinophils 16 per cent; lymphocytes 35 per cent. Sedimentation rate (Cutler) 17 mm. in one hour; (Westergren), 30 mm. in one hour. Blood sugar, 100 mgm. NPN 32 mgm. Kolmer, Kline, and Kahn negative. The rest of the laboratory work showed a negative tuberculin



2—a. X-ray of chest of Case II taken before adrenalin.

b. X-ray of chest of Case II taken 1 hour after injection of adrenalin.

c. X-ray of chest of Case II taken 24 hours after injection of adrenalin.

per 100 cc. of blood; N.P.N. 48 mgm. per 100 cc. of blood; Kolmer and Kline negative. Urinalysis negative. BMR 0; EKG normal. Gastric analysis showed a peak acidity of 58 units of free acid and 64 units of total acid. Tuberculin reaction negative. Sputum examined for tubercle bacilli negative (repeatedly). X-ray films of chest revealed an extensive involvement of both lungs. There was considerable consolidation, and all lobes were involved on both sides. Temperature 98.6; pulse 80; respiration 20; blood pressure 100/70.

*Case II.*—A twenty-seven year old white female complained of persistent, non-productive cough and some pain in left chest of six weeks' duration. Her family history revealed that asthma was a complaint of her paternal grandmother as well as her father. Her physical examination was essentially negative, except for her chest, which showed many rales of all descriptions over both anterior and posterior,

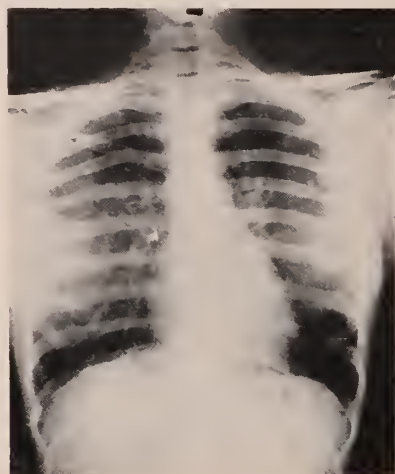
reaction, sputum examination for tubercle bacillus negative (repeatedly), sputum examination positive for eosinophils, specimen aspirated from sinuses, positive for eosinophils. Urinalysis was negative. EKG normal, BMR minus 8. Gastric analysis showed a peak acidity of twelve units of free acid and twenty units of total acid. The stool examination failed to reveal any amoeba, ova, or parasites. Agglutination for virus infection was negative. X-ray films of antra showed some cloudiness over the left antrum. X-ray films of chest showed in the lower lobe of each lung a shadow which was regular and 3 cm. in diameter. Skin test for *Trichina spiralis* was negative. The usual allergic skin tests to inhalants were negative. Temperature was 98 degrees; pulse 80; respiration 18; blood pressure 110/70.

*Case III.*—A sixteen year old white female complained of persistent non-productive cough and



slight pain in left axillary area of chest of three days' duration. She had no other complaints. Her past history revealed asthma and hay fever. On physical examination she was normal except for a

tuberculin reaction, sputum examination for tubercle bacillus negative, urinalysis negative. EKG was normal, BMR minus 5. Stool examination failed to reveal any amoeba, ova, or parasites. X-ray films



3—a. X-ray of chest of Case III taken before adrenalin.

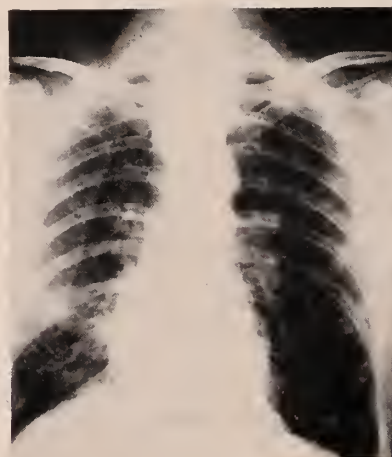


b. X-ray of Chest of Case III taken 1 hour after adrenalin.

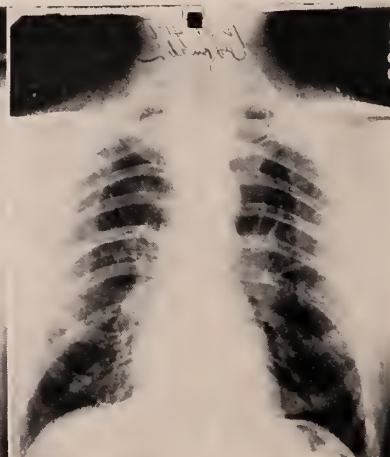
few squeaky rales in the axillary region of the left chest. Laboratory examination of the blood yielded the following data: red cell count 4,360,000; hemoglobin concentration 86 per cent; and white cell count 8,800. Neutrophils filament 45 per cent, non-filament 3 per cent, *eosinophils* 16 per cent, lympho-

of chest showed in each lung, about the mid portion, a shadow which was fairly regular in outline and 3 cm. in diameter. Temperature 98 degrees; pulse 74; respiration 18; blood pressure 100/70.

*Case IV.*—A white male, forty-eight years of age,



4—a. X-ray of chest of Case IV before adrenalin injection. (Lower right side.)



b. X-ray of chest of Case IV 1 hour after adrenalin. (Lower right side.)

cytes 36 per cent. Sedimentation rate (Cutler) 15 mm. in one hour, sugar 100 mgm., N.P.N. 32 mgm.; Kolmer, Kline, and Kahn were negative. The remainder of her laboratory data showed a negative

complained of cough and wheezing. He had been a victim of bronchial asthma for four years. After an acute siege of coughing and dyspnea, associated with low grade fever, his chest was X-rayed, and

there was found in the middle lobe of the right lung an area of infiltration. Further laboratory data revealed a red blood cell count of 5,010,000; a hemoglobin content of 100 per cent, white blood cells 10,600, with 54 per cent filamented cells and 7 per cent non-filamented, eosinophils 9 per cent, lymphocytes 30 per cent, blood sugar 60 mgms., N.P.N. 30 mgms., sedimentation rate 12 mm. in 60 minutes. Kline, Kolmer, and Kahn negative; tuberculin test 2 plus; BMR minus 13, EKG normal, urinalysis negative.

On the assumption that we were dealing with an allergic reaction in the lungs (Loeffler's syndrome), and that in all probability it was due to localized edema, simulating angio-neurotic edema, which in turn is believed to be due to hyperpermeability of the capillaries, the effect of a sympatheticomimetic amine was tried.

After the original X-ray, which showed increased density in both lower lobes resembling infiltration, the chest was X-rayed on the following day, and the same shadows were present. 0.5 cc. of adrenalin (epinephrine) was injected subcutaneously; after one hour the lungs were X-rayed. This film showed a complete disappearance of the shadows previously seen in the lower lobes of both lungs. The next day the chest was X-rayed again, and the original shadows had returned to the same locality as previously noted. *This would appear to be evidence that the assumption stated above was correct, and it is presented as an original observation that has not been reported in the literature before.* (Figures 2, 3, 4).

An attempt was made to reproduce the same results with a subsequent injection of adrenalin, but the shadows did not clear. A possible explanation of this failure can be attributed to the fact that the patient was taking daily an ephedrine product for relief of the aggravating symptom of cough. It is possible that she had become "adrenalin fast", and this may explain our failure.

In a review of the literature of Loeffler's syndrome we fail to find reference to an observation made on X-ray films before and after the administration of epinephrine and the disappearance of the pulmonary shadows. However, we find in Reimann's *The Pneumonias* this statement: "It is assumed that pulmonary tissue may become sensitized in the same manner as the nasal mucosa becomes sensitized, and that contact with a specific allergen may result in a sudden infiltration of the lung with signs

resembling pneumonia. There is some clinical, as well as experimental confirmation of this idea. Such a diagnosis rests on X-ray evidence of an afebrile pulmonary infiltration in an allergic individual (especially in the asthmatic) with a normal white count except perhaps for eosinophilia, which rapidly subsides after the injection of adrenalin."

In Osler's *Principles and Practice of Medicine*<sup>22</sup>—1915, we find a description of angio-neurotic edema (Quincke's disease) with this definition: "An affection characterized by the occurrence of local edematous swellings more or less limited in extent, and of transient duration." In Osler we do not find evidence of chest X-rays and blood counts in this interesting disease, but had they been done we might have found pulmonary infiltration and eosinophilia.

Edema of the larynx is the most dangerous of all types of Quincke's disease, and this leads us to believe the edema might have a predilection for the respiratory tract as well as the skin. The preponderance of evidence is in favor of allergy as the etiological factor.

Loeffler's attention was first attracted to the symptom complex while studying roentgenological films of tuberculosis; he also mentioned an allergic basis but did not stress it. Later studies, some of which are mentioned in the reference, bring out more prominently the allergic basis of the condition. Asthma is frequently a precursor. Blood eosinophilia and the benign clinical symptoms as compared with the malignant X-ray films create a bizarre picture which is as fascinating clinically as it is interesting academically. Some authors have presented cases of Loeffler's syndrome associated with parasitic intestinal infestations, and these we consider true to the definition of the syndrome. Others, however, have included pulmonary infiltrations of all descriptions, with fever, the patient being apparently quite ill, leucocytosis up to 66,000, WBC, and with prolonged or delayed clearing of the lung—three to eight months—indicated by X-ray films. The nomenclature of this heterogeneous group of lung infiltrations includes pneumonitis, virus pneumonia, eosinophilic pneumonia, virus pneumonitis and a host of other terms which really mean lung infiltrations of unknown origin. This group cannot be considered as having the same etiological basis as Loeffler's syndrome, and we disagree with the inclusion of them in this syndrome.



The pathological involvement in Loeffler's syndrome has not been extensively observed, as the subjects do not come to autopsy, unless they die suddenly from some accidental cause, as in H. Von Meyenberg's cases. However, it is possible by other means than autopsy to investigate pathological changes—edema of the lips in urticaria, a pathological condition, can be relieved by the injection of epinephrine. The mechanism involved here is the result of a sympathicomimetic agent and indicates that the pathology is the escape of fluid from the capillaries due to so-called hyperpermeability of these organs. Other types of Loeffler's syndrome may be caused by bacterial allergens, and in these cases there may be marked eosinophilic infiltration; this type of lung infiltration cannot be relieved by a sympathicomimetic agent. In Loeffler's syndrome which is associated with intestinal parasites or *Trichina spiralis*, it is probable that the above parasites act as allergens, and when the offending agents are destroyed, the lung infiltrations clear.

Eosinophilia is usually present in most allergic conditions and is considered as an essential part of Loeffler's syndrome. However, although its presence is certainly an anchor sheet in the syndrome, it is possible that it may be absent, as it is in other allergic conditions at times.

The familial aspect of this syndrome has not been stressed in any of the literature we have reviewed, and we would like to emphasize it here. In our first case, the father of the girl in Case II, experienced a pulmonary infection on December 1, 1943, which was diagnosed as virus pneumonitis. After a four weeks' illness, which included high fever ( $103^{\circ}$ - $104^{\circ}$ ), cough, hemoptysis, pain in chest, moderate leucocytosis, the patient began to improve clinically. On December 28, 1943, the patient's chest was X-rayed. The roentgenologist made a diagnosis of advanced tuberculosis. At this time the patient was improving clinically, gaining weight, having a normal temperature and feeling better every day. A week later, the chest was X-rayed again. At this time the roentgenologist considered carcinoma of the lung as a possibility, but could not be sure. Two weeks later the chest was re-X-rayed. The same shadows were present, and the roentgenologist was undecided as to the diagnosis. The patient at this time was steadily improving clinically, gaining weight and feeling fine, while

the X-ray man believed the patient had serious lung pathology. After three months and a gain of 25 pounds in weight, the patient's chest was X-rayed and was clear except for a few increased bronchial markings. We conclude that these two cases, father and daughter, have an allergic history, with asthma as a precursor and a tendency to pulmonary infiltration. In addition to the clinical interest that this symptom complex presents, we can also see the possibility of diagnostic errors, such as confusion with tuberculosis, which can create embarrassing situations as occurred in the five cases of A. A. Karan and Emanuel Singer.<sup>8</sup>

We wish to point out certain features which have not been too well emphasized, namely, the probability of a familial characteristic, the metallic taste of the sputum, the frequency of asthma as a precursor, and the fact that the pulmonary shadows can be made to disappear temporarily by the injection of adrenalin (epinephrine).

We are of the opinion, and it is shared by many others, that the etiology lies in some allergic reaction. The precise allergen may be difficult to isolate, as it is in asthma, and there may be many different causes. We cannot agree with the idea of tuberculosis as an etiological agent. We are of the opinion that intestinal parasites act as allergens which are etiological agents.

X-ray findings are quite variable. In our cases they were bilateral and unilateral, regular in outline and in the lower and middle lobes. In others the shadows may be more massive, irregular, shifting from one lobe to another and from one lung to the other. The similarity to tuberculosis is confusing to the roentgenologist unless he is familiar with the laboratory findings and the clinical features. For this reason it is important to share with the roentgenologist our clinical knowledge. No diagnosis should be made on a single X-ray plate; repeated X-rays are important, and serial copy X-rays are frequently necessary.

Eosinophilia is little understood. The cells are of myeloid origin and appear often in large quantities, as well as in many conditions, such as asthma, hay-fever, chronic skin diseases (eczema), parasitic intestinal infestations, myelogenous leukemia, as also in Loeffler's syndrome. They are seldom concentrated around an area of infection as they are not phagocytic, but they are a prominent feature in the pathological picture of allergy, being increased in



the blood stream, as well as in the tissues and bone marrow.

#### SUMMARY

The literature of pulmonary infiltrations (Loeffler's syndrome) has been reviewed.

Four cases of Loeffler's syndrome have been reported.

The effect of epinephrine in three cases has been noted.

The etiology and pathology have been discussed.

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## REPORT OF FIVE CASES OF MENINGITIS TREATED EMPIRICALLY WITH SULFANILAMIDE UNDER RURAL AND LOW ECONOMIC CONDITIONS

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and

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We all know of the strain placed upon physicians during the past two years; we know that diagnostic procedures have been greatly curtailed, not by choice, but from lack of sufficient time. We all know, too, that this could become a regrettable habit, which we should guard against at all times. "During the epidemic of influenza" in the winter 1943-1944, rarely was a case of influenza seen by me a second time. There was always a new case of pressing importance.

Total cases of meningitis reported to Suffolk from Southampton, Isle of Wight and Nansemond Counties from January, 1943, to April, 1944:

Colored -----12

White ----- 6

Colored, male, age 16, (suspect)----- 1

Of the colored cases there were

Six males, ages 12, 17, 9, 2, 2, and 20 months.

Six females, ages 10, 10, 30, 18, 14 and 11 months.

Of the white cases there were

Five males, ages 4 months, 54, 26, 14, 11.

One female, age 30.

Five of these were reported by hospitals.

We know of at least 6 deaths reported and there were perhaps others. Unfortunately, the morbidity and mortality reports are incomplete.

The first of the five (5) cases to be reported was begun on sulfanilamide therapy at the time of original examination. Because of the excellent results in this case it was employed in subsequent cases. In spite of this small series it was considered worth reporting to the profession because of the prompt recovery in each case with the absence of any untoward reactions and a total lack of sequelae. An extremely minimum amount of study is frankly admitted and this one item alone may be the most important one to the general practitioner in small

rural areas not blessed with hospital and laboratory facilities.

In a reply to Dr. Crow, dated March 23, 1944, Dr. H. B. Haag, Professor of Pharmacology, Medical College of Virginia, states: "In regard to the question as to the difference in concentration in the spinal fluid level of the various sulfonamide drugs, it appears that, with the exception of sulfathiazole, they all pass readily into the cerebrospinal fluid, reaching concentrations averaging 40 to 65 per cent of that present in the blood. Sulfathiazole reaches a concentration of only about 20 per cent of that found in the blood. Nevertheless, apparently because sulfathiazole is not so easily bound by the proteins of the cerebrospinal fluid, it has proven quite effective in the treatment of certain types of meningitis. However, sulfadiazine is the drug of choice at the Medical College of Virginia.

"Here at the college we use sulfadiazine for the treatment of meningitis, except those due to staphylococcus, when sulfathiazole is used. As a general procedure we do the following:

"Sixty grains are given by vein followed in 6 hours by 30 grains intravenously. Beginning 6 hours after this the patient is given 15 grains orally every 4 hours. Only one spinal puncture is made, and that to determine the type of organism involved. We make sure that the patients secrete 1,500 cc. urine daily. Blood counts are started on the fifth day of therapy. In patients with kidney disease or in patients sensitive to sulfadiazine we use sulfanilamide.

"In a recent circular letter issued by the Surgeon General of the U. S. Army sulfadiazine is recommended as the drug of choice in the treatment of meningococcic meningitis with sulfanilamide as the drug of second choice."

I want to take up briefly here the differentiation between a meningismus and meningitis. I believe that every infant and child up to 2 and 3 years of age will show a cervical rigidity when acutely and

\*Read before the Medical Society of Virginia at its annual meeting in Richmond, October 23-25, 1944.

Purpose of This Report: Possible value to physicians seeing cases in rural areas who do not have laboratory facilities and where spinal punctures either are impractical or impossible.

severely ill with an infectious disease. I believe this to be nearly 100 per cent true. Thirty-two years ago, two of my professors in medicine, Dr. Frank Winders, a good teacher and certainly very popular, and Dr. John H. J. Upham, whom you all know, and who became the Dean of the College of Medicine, Ohio State University and later president of the A.M.A., taught a simple method of differentiating between a false and a true cervical rigidity. Although simple, it requires a certain amount of gentleness, tact, and patience. By pressing gently but firmly the thorax on the examining table, then slowly lifting the head, giving the muscles time to relax, the chin may be brought against the upper sternum in meningismus. Never can this be done in any kind of meningitis. It may take as much as 30 minutes or more, however, to bring about the necessary relaxation of the muscles involved. This sign will be evident before any others and is sufficient on which to begin treatment. I hope Dr. Birdsong will give you a more detailed and scientific discussion on the diagnosis of meningitis than I can.

*Case 1:* H. L., c., m., 10 mos., Nansemond County. This patient was seen one time only in my office on May 3, 1942. History of sudden onset with convulsions, followed by high fever and vomiting, restless, later becoming stuporous. Physical findings were as follows: well developed, colored male infant, acutely ill, semi-comatose, rectal temp.  $104^{\circ}$ , marked cervical rigidity and rapid pulse; otherwise essentially negative. There was no history of preceding illness and no history or evidence of trauma. Throat and ears unremarkable—no trismus. No pathology detected in the lungs and heart, being negative except for rapidity. Abdomen negative. No paralysis of extremities, and no skin lesions seen. Spinal puncture was not done. Diagnosis: Meningitis, type undetermined. Therapy was begun immediately, using sulfanilamide, initial dose 10 grs., followed by 5 grs. q. 4 hrs. for 36 hours. No special reaction to the drug was noted and patient was symptom free three days later.

*Case 2:* Baby C., white, female, age 2 years. Patient brought to my office April 23, 1943, with history of slight upper respiratory infection for 2 or 3 days preceding. On original examination a definite diagnosis could not be made but meningitis was suspected in view of rather sudden onset, vomiting, temperature and slight stiffness of neck.

Next day, April 24, there were definite signs of meningeal involvement. Baby appeared acutely ill, temperature  $103^{\circ}$ . Child restless, irritable, at times stuporous. There was marked rigidity of the neck, slight opisthotonus, positive Kernig and Brudzinski signs. No history of preceding injury, no evidence of otitis media. No chest pathology detected. No paralysis or weakness of extremities. Diagnosis: Meningitis, undifferentiated. Treatment was begun, using sulfanilamide, initial dose grs. 10, followed by 5 grs. q. 4 hrs. Patient appeared to be completely recovered 72 hrs. after beginning therapy.

*Case 3:* J. L., c., m., 8 yrs., suburbs of Suffolk. There was a history in this case of sudden onset, with high fever and irritability, followed rapidly by drowsiness. The child was seen by me December 18, 1943, which was one day after onset. At this time the following was noted: Well developed, c., m., child lying in bed on his side with head drawn back, back arched and knees flexed. Deep coma existed. There was extreme cervical rigidity, retraction of the head, stiffness of the back, positive Kernig's sign and Brudzinski also positive. Diagnosis: Meningitis. Sulfanilamide therapy was begun immediately in the same dosage as that in the previous two cases. Two days later, December 20, definite signs of acute meningeal involvement were still present but deep coma had disappeared and child was fairly rational. There was very marked retraction of the head and great stiffness of the neck and back, and opisthotonus was marked. Temperature, which had been high— $104^{\circ}$ —dropped to  $101^{\circ}$  by December 22. There was considerable daily improvement in general appearance and a rapid decline in temp., the latter reaching normal by December 24. Signs of meningitis gradually disappeared until the child was symptom free, about one week from date of the first visit. In this instance the family was known to be syphilitic, but serology test in the case of patient was negative.

*Case 4:* L.M., c., m., 22 mos. old. In this case there was a history of vague prodromal symptoms of about one week's duration, followed by sudden onset, with temperature, vomiting and anorexia. On examination, the patient was seen to be quite ill, and apparently suffered pain on handling, especially on movement of head and neck. There was definite rigidity of the neck. No evidence of otitis media was found, but there was congestion in the



base of the left lung with temperature  $103^{\circ}$ . No paralysis was noted. Diagnosis: Meningitis. The same therapy was begun on this child as that used in the above reported cases. The child was first seen on January 4, 1944, and again on January 6 and 10. On January 6, the child was definitely improved; temperature had fallen to  $100^{\circ}$ , and all signs and symptoms of meningitis had disappeared by January 10.

*Case 5:* H. J., w., m., 9 yrs. old. I was called to see this patient on January 21, 1944, the day of onset of acute illness. This patient was known to be physically and mentally subnormal and is said not to have been a well child all his life. However, there was nothing definite except poor appetite, emaciation and inability to do well at school. History obtained from the mother revealed that the child had been sick about Christmas time with what may have been a mild case of influenza. No physician was in attendance at that time. For five days—from the 14th to 19th of January—the child seemed more lethargic than usual but continued in school. He became acutely ill January 21, and when seen by me was extremely agitated, maniacal and it was difficult to restrain him. This boy was poorly developed and poorly nourished, exceedingly restless, irritable, irrational, and semi-comatose. He had complained of severe headache from onset of illness. Temperature  $103\frac{1}{2}^{\circ}$ , rigid neck, with slight retraction of the head, Kernig positive, Brudzinski positive. There was hypersensitivity of the skin, but no skin lesions were seen. There was no paralysis of extremities. Diagnosis: Meningitis. At first, poliomyelitis was considered as a possibility but was ruled out. Agglutination test and blood culture were negative. Sulfanilamide was begun January 21, with an initial dose of 10 grs., followed by 5 grs. q. 4 hrs. Also codeine grs.  $\frac{1}{4}$  as needed were given to relieve headache and irritability. Response was rapid and on second day, January 22, the child had become much less irritable and restless and, unless handled, lay quietly in lateral position with head slightly retracted, back slightly arched, knees flexed. He was still not completely rational, although he continued to complain of headaches, and he would respond occasionally to simple questions. Skin was still hypersensitive to touch. Neck rigidity was still pronounced but temperature had fallen to  $101^{\circ}$ . By the third day, January 23, there

had been so much improvement that the dosage of both sulfanilamide and codeine were reduced to a minimum—sulfanilamide grs. 5 t.i.d. Boy promptly relapsed and was given combination of sulfanilamide and sulfathiazole,  $\frac{1}{2}$  gm. of each q. 4 hrs. He again responded and continued to show steady improvement, although gradual, with some cervical rigidity continuing for about ten days. On February 6, he developed an unexplained severe pain in the left hip. Associated with this was limitation of motion in all directions except with excruciating pain, and rise in temperature. This condition lasted less than 24 hours and no explanation for it was determined. Sulfadiazine was substituted for the sulfanilamide—sulfathiazole mixture on February 6. The child progressively improved and was discharged February 14, as cured. Examination April 16 revealed no sequelae of this boy's recent illness and he appeared to be in better health than usual, having gained 20 pounds.

#### CONCLUSIONS

1. As soon as diagnosis of meningitis was made, prompt treatment was considered preferable to waiting confirmation of type. Time lost in hospitalization may mean a case lost.
2. Early treatment is most important item. If improvement is not apparent in 24 to 36 hours, change to another sulfonamide, preferably sulfadiazine.
3. There was prompt response to sulfanilamide therapy with no untoward reaction.
4. Dosage of sulfanilamide was somewhat heavier than generally recommended.

#### Drugs employed:

1. Neosulfanil Tabs.  $\bar{a}\bar{a}$  gr. V with Sodium Bicarbonate.
2. Codeine, Tabs. Hosacode, Haskell, mild.
5. I believe there has been too much emphasis on the danger of the use of these drugs, thus producing an unwarranted timidity in their use by physicians. We all know of the so-called dangers, but, personally, I have seen nothing but mild reactions—many mild nauseas and some slight eruptions, but nothing serious.
6. All cases were seen by Drs. H. D. Crow and B. R. Allen, Health Officers having jurisdiction. Diagnosis confirmed by them and meningismus was ruled out. Especial acknowledgment is made to Dr.

Crow who aided very materially in the preparation of this report.

*137 Bank Street.*

#### DISCUSSION

DR. McLEMORE BIRDSONG, University: I find myself unable to agree with Dr. Dawson in the diagnosis and treatment of meningitis without at least a diagnostic lumbar puncture. It is impossible for me to say from this report that these reported cases are meningitis. They could be mild encephalitis, abortive poliomyelitis, meningismus, meningitis, or, of course, other acute disease. If they are meningitis, they must have been meningococcus, for, otherwise, there is very little chance that any of the patients would have recovered.

The diagnosis of meningitis is usually made on the following points: A history of fever, vomiting and drowsiness, coma or convulsions. The physical signs vary quite a lot in different age groups. In small children one of the earliest and most important signs is the bulging of the fontanel. Other signs are stiff neck, positive Brudzinski and a positive Kernig sign. Unfortunately, these signs appear in numerous other diseases in infants and children, and occasionally we have meningitis without the above symptoms and signs. The third and final method of making a diagnosis is the lumbar puncture, and there is no reliable method of making a diagnosis of meningitis unless a lumbar puncture is performed. This will not only rule out meningitis if it is not present, but by proper study of the spinal fluid will give information absolutely necessary for proper treatment.

Several years ago before the advent of specific therapy, the differential diagnosis as to the type of meningitis was not as important from a therapeutic standpoint as it has become under our vastly improved method of specific therapy. The mortality of all types of meningitis except meningococcus meningitis was exceedingly high, and even in meningococcus meningitis the results were not too pleasing. Today, the agents we have for the treatment of the various types of meningitis have completely changed our outlook on this disease. In the meningitis sulfadiazine is definitely the drug of choice; in influenzal meningitis, a combination of specific anti-influenzal rabbit serum with sulfadiazine. Recently we have used penicillin in the treatment of pneumococcus meningitis, and certainly this seems superior to all previous methods. This is also true in staphylococcus meningitis. In streptococcus meningitis sulfadiazine plus blood transfusions appear most helpful.

Because of the difficulty in obtaining sufficient information in the home, I feel that meningitis is a disease that deserves hospitalization, as much so as conditions such as appendicitis and bleeding peptic ulcers.

There is no place in Virginia that a patient cannot get hospitalization within several hours, and I do not believe

that time lost in hospitalization is of as great danger as the blind treatment which must be rendered in the home without adequate facilities for diagnosis and treatment.

I wish to show two slides which show the difference in the mortality rate before the use of specific therapy and under the somewhat changing status between 1937 and the early part of 1944. (Slides were shown.)

DR. H. O. BELL, Belleville, New Jersey: We have a hospital which covers the whole of Essex County, in New Jersey, and we had 170 cases of epidemic meningitis admitted in 1943, with nineteen deaths. We treated practically all of them with sulfadiazine, but we had to give it as sodium sulfadiazine intravenously if they could not swallow. As Dr. Birdsong says, I do not see how you can possibly make a diagnosis without lumbar puncture.

I think it is extremely important to get adequate fluid into these patients.

As to the Waterhouse Friderichsen syndrome he spoke of, we had five cases. I have never seen a case with true Waterhouse Friderichsen syndrome live, because I do not think the diagnosis can be made definitely until the patient is dead.

In the influenza cases you have to treat them with Alexander serum, and I do not think you can adequately treat those in the home.

DR. DAWSON, closing the discussion: I have nothing more to add but want to thank Dr. Birdsong and Dr. Bell for their discussions.

Of course, we all know that accurate differential diagnosis, as to type, cannot be made without a spinal puncture. I want only to call attention to the fact that sometimes it is impossible to get a spinal puncture.

I may question Dr. Birdsong's statement that there are no places in Virginia where hospitalization is impossible. There are places right in my home county.

With the triad of excruciating headache, cervical rigidity, and temperature present, it is imperative to do something at once. I would suggest the following procedure when meningitis is suspected:

1. Give sulfonamides immediately, large dosage, first 24 or 48 hours.
2. Type at once, remembering that the next 24 hours may be the crucial ones.
3. Hospitalize if facilities are available.

Give any sulfonamide available at the moment. Sulfadiazine is the one of choice, although I have found sulfanilamide with soda seemingly effective and perhaps slightly more convenient of administration in infants and young children. It is barely possible that the final chapter on the sulfonamides has not been written.

Recent evidence indicates that not only is one spinal tap sufficient but great harm may be done the patient by repeated taps—(Dr. Hobart A. Reimann, Professor of Medicine, Jefferson Medical College).

## SPLENOMEGALY WITH HEMOLYTIC JAUNDICE AND BILATERAL LEG ULCERS.

ANTONIO GENTILE, M.D.,\*  
Newport News, Virginia.

The following report is on a case of splenomegaly treated by splenectomy. The patient, a white male, aged 47 years, was first seen on April 10, 1938, at which time he was admitted to the hospital complaining of large ulcers on both legs. The patient stated that for the past seven years he had had these ulcers but it was only during the last six months that they had become troublesome and painful to the extent that he could not work during the last two months. Swelling of both feet and ankles was present during this period of time.

PAST HISTORY: Essentially negative.

FAMILY HISTORY: Essentially negative.

PHYSICAL EXAMINATION: Revealed a thin, pale white male who appeared to be several years older than his stated age. Temperature was 100, respirations 20. The face and hands were pale and yellowish in color. The sclera was slightly yellowish. The teeth were dirty and carious. Chest, lungs, heart and abdomen were essentially negative. Extremities: Over the anterior and medio lateral surfaces of both legs from the knees down, there was a denuded, coated-like area with granulated tissue and a foul, discharge, probably due to a mixed infection.

LABORATORY FINDINGS: WBC 8,200; 83 per cent polys, 15 per cent lymphs, 1 per cent eos., and 1 per cent myelocytes; RBC 2,200,000; hemoglobin 40 per cent; urinalysis was negative, icterus index was 13 and Wassermann was negative.

The patient remained in the hospital for one week during which time he received two transfusions of 600 cc. of whole citrated blood. The patient's temperature varied from 98 to 102 and the pulse from 80 to 90. Unna paste boots were applied to the ulcers of the legs. Ventriculin, liver extract capsules and multiple vitamin capsules were also given. He was discharged improved, the ulcers of the legs being almost healed.

DIAGNOSIS: Atrophic ulcers of the legs, bilateral.  
Dental Caries.  
Pyorrhea.  
Secondary anemia.

One week later, the patient returned to the hospital and was given another transfusion. From April 28, 1938, to May 13, 1939, he made weekly visits to the hospital to have the Unna paste boots



No. 1.—Patient, the liver and spleen outlined. Note bilateral leg ulcers. May 1939.

re-applied to his legs. The boots had a remarkable healing effect. On March 22, 1939, he was readmitted to the hospital with a complaint of weakness and dyspnea of one week's duration, during which time he remained in bed with arthrophyma of both feet and ankles. The patient had a cough with expectoration, there was nausea and vomiting with

\*Although this Case Report was actually written by Dr. Antonio Gentile prior to his recent death, it was edited by Dr. Ricardo Diago, of the Elizabeth Buxton Hospital, at the request of a Committee of the Staff of that Hospital, and the paper is sent to the MONTHLY by Dr. Russell Buxton with a request that it be published.



a generalized jaundice of the skin and sclera and he was in extreme respiratory distress. There was a white discharge on the eyelids. The nose was obstructed on both sides, the teeth were dirty and carious, some were missing and there was pyorrhea. The mouth was dry, the tongue coated and the breath had a uremic odor. Auscultation of the heart revealed a systolic murmur at the apex and this was heard over the entire precordial area. The lungs revealed a slight dullness and moist rales in both bases posteriorly. The spleen was huge. The kidneys were not palpable. There was generalized tenderness in both upper quadrants of the abdomen. Blood pressure 138/60. There was slight edema of the scrotum. The legs appeared to be much better, but there was still a foul malodorous discharge.

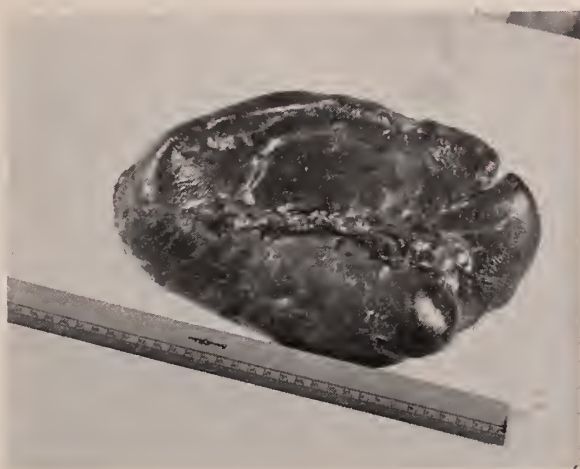


No. 2.—Patient in a sitting position. May 1939.

The feet and the ankles were edematous. Temperature was 98, pulse 88, and respirations 24.

LABORATORY FINDINGS: RBC 1,480,000; hemoglobin 27 per cent; WBC 5,500, 64 per cent polys,

35 per cent lymphs, 1 per cent eos. and rare normoblast. Urinalysis was negative. The patient was digitalized and was given ammonium nitrate and 3 blood transfusions after which RBC increased to



No. 3.—Spleen following removal.

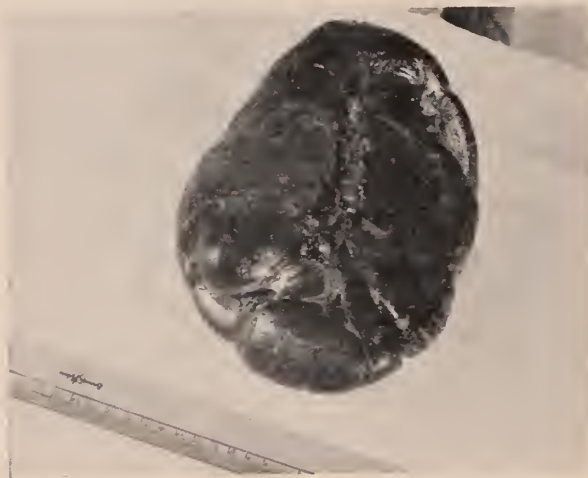
2,500,000 and hemoglobin to 45 per cent. Dyspnea was immediately relieved after the first blood transfusion. The patient was discharged a week later after Unna paste boots were applied to his legs.

FINAL DIAGNOSIS: Atrophic ulcers of both legs.  
Carious teeth.  
Pyorrhea.  
Dilatation of the heart.  
Congestion of bases both lungs.  
Jaundice.  
Splenomegalia.  
Secondary anemia.

Unna paste boots were applied weekly until May 13, 1939, on which date he was re-admitted to the hospital. He stated he had gotten along well since his last discharge and had been able to resume his work and, although he was still jaundiced, he was in no discomfort. The heart was enlarged to the left with a loud systolic murmur at the apex which was transmitted over the entire precordial area. Blood pressure was 150/80. The spleen was more enlarged. Leg ulcers were improved.

LABORATORY FINDINGS: RBC 2,700,000; hemoglobin 50 per cent; WBC 5,400, 62 per cent polys, 30 per cent lymphs, 6 per cent monocytes, 2 per cent eos. Urinalysis showed traces of albumin. Wassermann was negative. Blood platelet count 378,000. Bleeding time was 4 minutes, 30 seconds. Venous

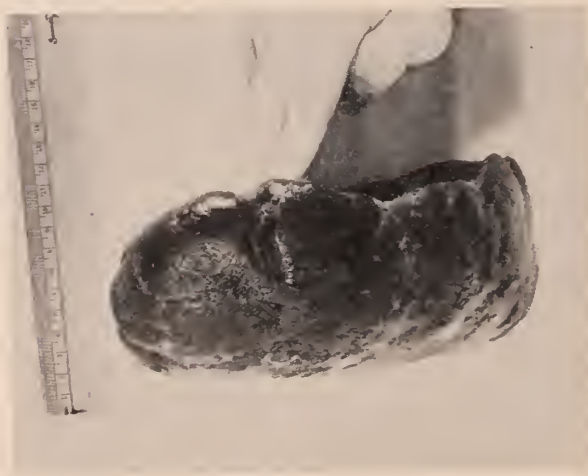
coagulation time was 5 minutes, 45 seconds. Capillary coagulation time was 3 minutes, 30 seconds. Icterus index 16, reticulocytes,  $20\frac{1}{2}$  per cent. Fragility test showed hemolysis beginning at 0.5 per cent, complete at 0.42 per cent; control hemolysis beginning



No. 4.—Spleen.

at 0.42 per cent, complete at 0.32 per cent. A diagnosis of hemolytic jaundice and splenomegaly was made and a splenectomy was decided upon. The day of operation, another large transfusion was given before the patient was taken to surgery.

Under ethylene and ether anesthesia, the abdomen was cleansed with alcohol, ether and tincture of mer-



No. 5.—Spleen.

thiolate. The abdomen was entered through a left pararectus incision extending from the lower border

of the tenth rib down to and below the umbilicus, 18 cm. in length. The left rectus was retracted medialward. The peritoneum was incised and the abdominal cavity entered when an enlarged slate colored spleen presented through the incision. The stomach and the transverse colon were packed off with abdominal packs. The gastrosplenic ligament was incised, ligating the vasa brevia and exposing the lesser omental space. The lienophrenic ligament was ligated and divided. This was rather difficult in view of the numerous adhesions between the spleen and the left crus of the diaphragm. The spleen was rotated medialwards and upwards, delivering it through the wound. The tail of the pancreas was dissected from its attachment to the spleen and all bleeding points ligated. The lienocolic ligament was ligated and divided. The splenic artery and vein were then in clear view. These were transixed and



No. 6.—Spleen.

separately ligated in triple with linen thread. The hilus was clamped and the vessels divided. The lesser sac was closed off, using No. 1 chromic catgut to approximate the peritoneal flaps. Hot wet packs were used to stop the oozing in the region of the diaphragm. The abdomen was closed in layers, using No. 1 chromic catgut for the peritoneum and the fascia. Three silkworm sutures were used and the skin was approximated with Michel clips. Five minims of adrenalin were administered just before the splenic pedicle was ligated. There was a visible constriction of the entire organ. The patient stood the procedure unusually well, though an intravenous infusion of 5 per cent D.R.L. solution was started

in the middle of the operation to safeguard against any shock. The total amount of blood lost was estimated at 50 cc.

The liver which was markedly enlarged, was rather soft and homogenous in color, being a reddish brown and having sharply defined edges. No marked evidence of hepatitis could be observed. A moderate amount of bile tinged fluid was observed in the abdominal cavity when the peritoneum was opened.

Measurements of the spleen:

Length: 27.5 cm.

Width: At hilus 17.5 cm.

Breadth: Upper pole 10.25 cm.

Lower pole 8.5 cm.

Weight: With blood 76 ozs.

Without blood 68 ozs.

Immediately prior to operation, RBC were 2,300,000 and hemoglobin 48 per cent. Immediately following operation, RBC were 3,300,000 and hemoglobin 68 per cent.

On the first post-operative day, the RBC was increased to 4,490,000 and hemoglobin to 88 per cent; WBC 18,400, 92 per cent polys, 3 per cent lymphs, 4 per cent monocytes and 1 per cent eos. and a few normoblasts. Platelet count was 263,000. Urinalysis showed traces of albumin, one plus blood and one plus pus.

On the third post-operative day, RBC were 4,480,000 and hemoglobin was 85 per cent; WBC 16,600, 84 per cent polys, 9 per cent lymphs, 6 per cent monocytes, platelets, 380,000.

On the sixth post-operative day, RBC 4,220,000, 83 per cent hemoglobin, WBC 11,900, 75 per cent polys, 21 per cent lymphs, 4 per cent monocytes and platelets 580,000.

On the thirteenth post-operative day RBC were 4,440,000, hemoglobin 84 per cent, WBC 7,400, 72 per cent polys, 27 per cent lymphs and 1 per cent eos. Icterus index was 5. The patient was discharged improved. The heart was reduced to almost its normal size. The lungs were clear and there were no rales. The spleen had been removed, and a few teeth had been removed. The RBC and the hemoglobin were normal. Bilateral leg ulcers were still present but were improved.

On July 29, 1939, two months following discharge, the patient's RBC count was 4,580,000, hemoglobin 90 per cent; WBC 17,200, 63 per cent polys, 29 per cent lymphs, 4 per cent monocytes, 1 per cent eos. and 1 per cent baso. Platelet count was 368,000. The leg ulcers were completely healed and the patient apparently cured.

CONCLUSION: A case of hemolytic jaundice with a tremendously enlarged spleen and bilateral leg ulcers is reported.

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## Floral Eponym (32)

### GILLENIA

GILLE, A. FL. 17TH CENTURY

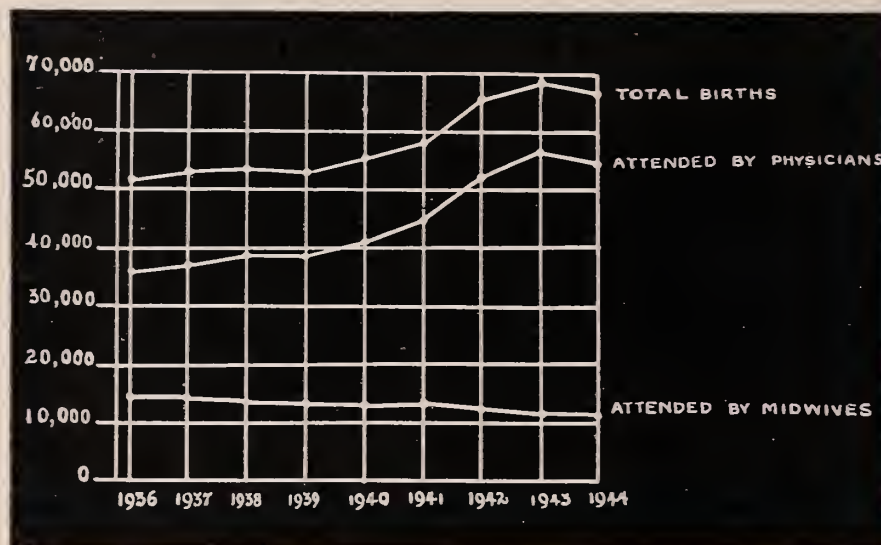
Gillenia is the name of North American perennial herbs of the rose family, commonly called Indian physic. Both species are woodland plants suitable for the wild garden. *G. stipulata* is called American ipecac and *G. trifoliata*, or Bowman's root, is often called false ipecac. According to Gray, Gillenia is dedicated to A. Gille or Gillenius, an obscure German botanist or physician.



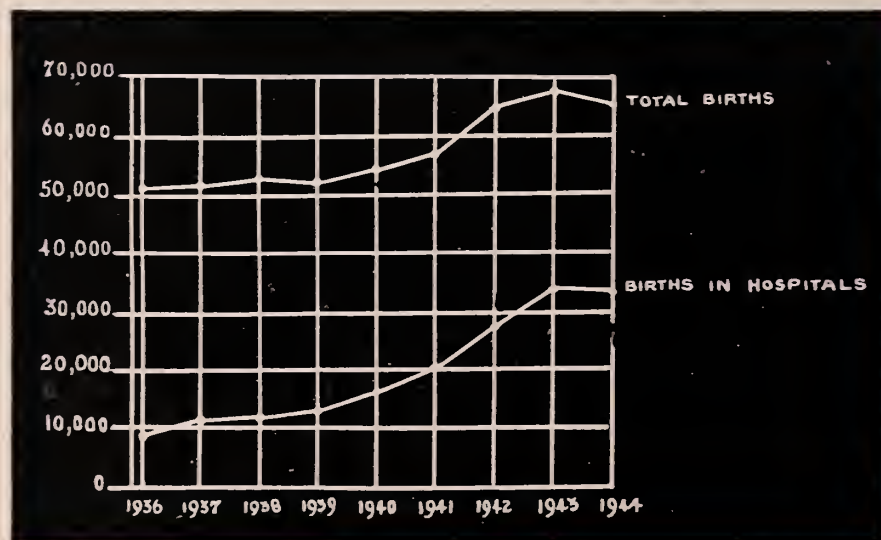
# GRAPHS SHOWING NUMBER OF BIRTHS, ATTENDANTS, AND PLACES OF DELIVERY

MATERNAL HEALTH COMMITTEE  
MEDICAL SOCIETY OF VIRGINIA

This chart shows the total number of births, the number attended by midwives, during the past nine years. the number attended by physicians and the number.



The chart below shows the number of births in hospitals during the past nine years.



## PUBLIC HEALTH

I. C. RIGGIN, M.D.,  
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for September, 1945, as compared with the same month in 1944, and for the period of January through September, 1945, compared with the same period in 1944, follows:

	Sept. 1945	Sept. 1944	Jan.- Sept. 1945	Jan.- Sept. 1944
Typhoid and Paratyphoid Fever	43	21	128	103
Diarrhea and Dysentery	1,772	1,205	6,227	5,249
Measles	19	22	1,255	17,031
Scarlet Fever	219	124	2,905	2,113
Diphtheria	67	37	233	191
Poliomyelitis	107	241	281	598
Meningitis	11	14	198	467
Undulant Fever	5	0	26	33
Rocky Mountain Spotted Fever	14	12	88	75
Tularemia	6	2	38	40

## ACCIDENTS TAKE DEATH TOLL IN ALL ACTIVITIES

Last year in the State, deaths due to accidents of all types totaled 2,149. The rate per 100,000 population in 1944 was 76.8. With the exception of the year 1943, when the rate was 76.0, this was the lowest since 1939. Accidental deaths in the

ity. Deaths from this cause numbered 588 in the State in 1944 in comparison with 634 for the previous year. The upward trend during former years was reversed in 1942; and in 1944, the rate of 21.0 was the lowest in the past fifteen years. Less travel and slower rates of speed no doubt were contributing factors.

As a cause of accidental death, falls ranked next to motor vehicles, and in 1944 totaled 367. Next in order came burns (including conflagration) with 235 deaths. Water-transportation and drowning followed with 196 deaths. Air-transportation totaled 164 fatalities; railway accidents, 89; firearms, 63; mechanical suffocation (including infants overlaid in bed), 59; mine and quarry accidents, 52; poisoning by solids and liquids, 42; agricultural and forestry accidents, 41; accidents involving machinery, 26; and other and unspecified accidents, 227.

Home accidents, as usual, took a higher death toll than industrial. There were 641 fatalities occurring in the home in 1944, which represents an increase of 67 deaths over the previous year. Falls accounted for the largest number of home accidents, 265. Other accidents in the home causing death

## DEATHS FROM ACCIDENTS IN VIRGINIA 1941-1944

PLACE OF ACCIDENT						
YEAR	TOTAL DEATHS	INDUSTRY	HOME	MOTOR- VEHICLE*	OTHER PUBLIC	OTHER AND UNSPECIFIED
1944	2,149	538	641	551	284	135
1943	2,181	586	574	609	298	114
1942	2,193	442	568	695	359	129
1941	2,486	385	572	1,048	304	177

\*Figures for "motor-vehicle" exclude a small number of deaths included in industry, home and unspecified places.

white race in 1944 numbered 1,640 (rate 77.2) and in the colored 509 (rate 75.2). This was the first year in which the white rate exceeded the colored.

The reduction in accidental deaths largely has been due to a sharp decline in motor-vehicle fatal-

ities. Deaths from this cause numbered 588 in the State in 1944 in comparison with 634 for the previous year. The upward trend during former years was reversed in 1942; and in 1944, the rate of 21.0 was the lowest in the past fifteen years. Less travel and slower rates of speed no doubt were contributing factors.

Fatal industrial accidents showed a decline from 586 in 1943 to 538 last year. However, this num-

ber represents an increase of 153 deaths over the last prewar year (1941). Accidental deaths occurring in industry were due mainly to air-transportation, water-transportation, railway accidents, accidents in mines and quarries, agricultural accidents, and falls.

Deaths from accidents occurring in *public places*

(excluding motor vehicles) totaled 284. The highest toll in this group was due to falls, drowning, and railway accidents. Other and unspecified accidental deaths totaled 135.

Accidental deaths during wartime in Virginia, in comparison with the last prewar year (1941), are shown by place of occurrence in the table below.

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## WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

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*President*.....MRS. P. M. CHICHESTER, Abingdon  
*President-Elect*.....MRS. J. E. HAMNER, Petersburg  
*Recording Secretary*...MRS. NATHAN SCHUMAN, Alexandria  
*Corresponding Secretary*...MRS. L. C. BRAWNER, Richmond  
*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond

### Report of President at 1945 Meeting.

As president of the Woman's Auxiliary to the Medical Society of Virginia it is a pleasure and honor to submit the following report for 1944-45 to the Medical Society of Virginia: At present we have nine well-organized Auxiliaries, with a total membership of three hundred and twelve paid up members. It has been my pleasure to visit most of these. To find them doing fine is great satisfaction. The participation in every phase of War activity is outstanding and 100 per cent. Each Auxiliary has sponsored a program on our major project for the year—The Prevention of Juvenile Delinquency from the Medical Aspect. In spite of the times our work has progressed steadily and satisfactorily. Only through divine guidance and the united efforts of officers and chairmen can the following activities be reported:

#### EDITORIAL—

Articles of interest from records of meetings have been published each month in the VIRGINIA MEDICAL MONTHLY, and sent to *The Journal of the A.M.A.* Announcements of all meetings have been published in the daily papers.

#### FINANCE—

A letter has been sent to Auxiliaries to remind them of the Maintenance Fund dues. All bills have been taken care of and the Treasury has a good balance.

#### HYGEIA—

All chairmen have been advised about the Campaign, and our membership has substantially increased over last year, and we have more prospects.

#### LEGISLATION—

Attended meeting of Virginia Women's Council of Legislative Chairmen and meeting of The League of Women Voters. Legislative Chairman holds herself in readiness at all times to help the Medical Society in any problems that may arise.

#### ORGANIZATION—

There are several fertile fields and the Chairman keeps an anxious eye on these and hopes something will materialize after the duration.

#### PROGRAM—

Programs on the Prevention of Juvenile Delinquency from the Medical Aspect and Physical Fitness have been sponsored. Chairmen suggests more wholesome recreation in the home, school, and church for youth.

Have conformed to programs supplied by National.

#### PUBLIC RELATIONS—

We have conformed to extensive list of programs and suggestions made by the National Auxiliary. Distributed circulars announcing Radio Net Work Broadcasts by A. M. A. and National Broadcasting Company.

#### REVISIONS—

Our committee is mindful of the opportunities and responsibilities that are theirs and hope to have a complete report with recommendations at the next meeting.



## WAR SERVICE—

Every member is actively engaged in some phase of War work. Especial attention and courtesy is shown wives of the doctors who are in the Service. Monetary contributions have been made to Red Cross and Soldier Telephone Fund. Christmas trees, gifts, and cigarettes have been furnished Soldiers and Sailors in the various hospitals. U. S. O. suppers have been sponsored, at which members acted as hostesses. Sent Christmas cards to all doctors in the Service. Bought War Bonds, and many are checking food stores for O. P. A.

## PARLIAMENTARIAN—

Our parliamentarian has attended all meetings and installed officers at the Annual Convention. Is most interested and cooperative.

## HISTORIAN—

Presidents are urged to send clippings of interest for State Scrap Book, and happenings of value and interest have been recorded.

## BULLETIN—

Reminders have been sent out soliciting new and renewal subscriptions with gratifying returns, as there is an increase over last year.

## MEMBERSHIP

Objectives for the year:

1. To make every effort possible to retain the present membership intact.
2. To interest the wives of Service doctors in Auxiliary work.
3. To add to the membership whenever possible.

## CANCER CONTROL—

Members have spoken before lay groups on the topic, literature has been distributed. Each Auxiliary has made contribution to the Financial Chairman when the drive was on.

## LEIGH-HODGES-WRIGHT MEMORIAL BED FUND—

This Fund was originated to aid financially an ill doctor or his dependent. A senior Medical Student was hospitalized at one time for many months. Auxiliaries have been reminded that this fund is available at any time an emergency may arise. Annual volunteer contributions are made.

## JANE TODD CRAWFORD MEMORIAL—

The fund has substantially increased this year. It is hoped this will someday materialize into a living memorial to this great heroine and Virginian by birth.

Our year has not exactly followed the usual pattern, for many new situations and problems have been encountered, but I am sure we will all measure up to our responsibilities, with a real display of initiative and resourcefulness.

I cannot express adequately my gratitude to the Advisory Council for their counsel, cooperation, and encouragement on all occasions, and to my Official Family for their loyalty, cooperation and kindness, for they have made possible whatever success may have been attained this year. Surely no president has ever had a more agreeable and happy family.

Little by little the time goes by, short if we sing through, long if we sigh; and little by little, an hour, a day, and another year has passed away.

VIRGINIA PEARSON  
(MRS. PAUL C.)

## Annual Meeting.

As has been announced, the Auxiliary could not arrange for a general meeting this Fall but held a meeting of its Board and chairmen of committees in Richmond October 16th, with the Auxiliary of the Richmond Academy of Medicine as hostess. Following the business session, luncheon was served in the dining room of the Academy.

Mrs. P. M. Chichester was installed as president for the ensuing year and the following were elected to serve with her: President-elect, Mrs. J. E. Hamner, Petersburg; vice-presidents, Mrs. R. B. Hightower, Alexandria; Mrs. A. S. Lilly, Richmond; Mrs. W. Carey Henderson, Nassawadox; and Mrs. Henry Townsend, Marshall; recording secretary, Mrs. Nathan Schuman, Alexandria; corresponding secretary, Mrs. L. C. Brawner, Richmond; treasurer, Mrs. Reuben F. Simms, Richmond; parliamentarian, Mrs. E. Latane Flanagan, Richmond; and historian, Mrs. H. A. Latane, Alexandria.

## NEW AND NONOFFICIAL WORDS

## THE ANTIBIOTICS

The meteoric rise in the number of antibiotics bids fair to overwhelm us with their terminology, if we do not make an occasional brief survey of this field which promises a revolution in our therapy. Who knows but that one of these may surpass even penicillin in effectiveness. Below is a list of antibiotics. Some are highly toxic to man; some are bactericidal, bacteriostatic, or fungicidal. Their action is not yet understood; penatin may act by producing  $H_2O_2$  by dehydrogenating glucose. They are being obtained from bacteria, fungi, and higher plants. Some are polypeptides, lipoids, pigments, unsaturated ketones, or quinones.

The presence of such multifarious bacterial and fungicidal chemicals and enzymes which are anti-antibiotic, indicates to our gross senses the bitter total war that has been waged since life began, between bacteria, fungi, and higher plants.

ANTIBIOTIC	SOURCE
Actinomycétin	Actinomycetes, many species
Actinomycin	Actinomycetes antibioticus
Allicin	Allium sativum (garlic)
Allopencillin	A variety of penicillin (X, III)
Aspergillin	Aspergillus flavus
Aspergillic acid	Aspergillus flavus
Chaetómin	Chaetomium cochliodes
Chloréllin	Chlorella (a green alga)
Chlóraphin	
Chrysogénin	
Citrínin	Penicillium citrinum
Clávacin	Aspergillus clavatus
Clavatin	Aspergillus clavatus (same as Clavacin)
Clavifórmin	Aspergillus claviforme (same as Clavacin)
Diplocóccin	Milk streptococci
Flavícín	Aspergillus flavus
Flavícidin	Aspergillus flavus
Fumigácín	Aspergillus fumigatus (same as Clavacin)
Fumigátin	Aspergillus fumigatus
Gigántic acid	Aspergillus giganteus
Gliotóxin	Gliocladium fimbriatum
Gramicidin	Bacillus brevis (of soil)
Gramicidin S	
Helvólic acid	
Lycopersicin	
Lysozyme	
Notátin	
Parasiticin	
Patulin	
Penatin	
Penicídín	
Penicillic acid	
Penicillin	
Penicillináse	
Pneumococcus capsule lysing agents	
Proactinomycin	
Prodigiósin	
Puberulic acid	
Pyocyanáse	
Pyocyanín	
Pyocyanic acid	
Spinulosin	
Streptomycin	
Streptothricin	
Subtilin	
Toxoflávin	
Tyrocidine	
Tyrothricin	
Bacillus brevis (Russian strain)	
Aspergillus fumigatus (same as Fumigacin)	
Tomato plant	
Tears, saliva, egg white (avidin?)	
(Same as Penicillin B)	
Aspergillus parasiticus	
Penicillium patulum (same as Clavacin)	
Penicillium notatum (same as Pencillin B, Notatin)	
Group of Penicillia (Australian)	
Penicillium cyclopium, puberulum, (thomii et al.)	
Penicillium notatum et al.	
Bacteria	
Soil bacteria	
Proactinomyces gardneri	
Penicillium aurantiovirens	
Pseudomonas pyocyaneus (bacterium)	
Pseudomonas pyocyaneus	
Pseudomonas pyocyaneus	
Penicillium spinulosum	
Actinomyces (Streptomyces) griseus	
Actinomyces (Streptomyces) lavendulae	
Bacillus subtilis	
Bacillus brevis	
(Mixture of Gramicidin and Tyrocidine)	

*Penicillin* is found as three varieties, depending upon the method of culture: penicillins F, G, and X. The English, just to be different and incidentally more logical, use the comparable terms: penicillins I, II and III. Penicillin X is also termed *allopencillin*; penicillin B is penatin; penicillin A is probably a mixture of penicillins I, II, and III. The penicillin-destroying enzyme produced by some bacteria is *penicillinase*. This may account for the lack of effect of this antibiotic on certain bacteria. Actinomycin is composed of actinomycin A—red, and actinomycin B—colorless.

## BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

**Common Ailments of Man.** Edited by MORRIS FISHBEIN, M.D. Garden City Publishing Co., Inc., Garden City, New York. 1945. 177 pages. Cloth. Price \$1.00.

**A Guide on Alcoholism for Social Workers.** By ROBERT SELIGER, M.D., Assistant Visiting Psychiatrist, Johns Hopkins Hospital. In collaboration with Victoria Cranford, Psychotherapist and Rorschach Analyst, Harlem Lodge, Catonsville, Maryland. Baltimore. Alcoholism Publications. 1945. 94 pages. Cloth edition \$3.50; paper edition \$2.00.

**Common Ailments of Man.** Edited by MORRIS FISHBEIN, M.D. Garden City Publishing Co., Inc., Garden City, New York. 1945. 177 pages. Cloth. Price \$1.00.

This little book is written mainly for the laymen and consists of a collection of 16 articles which first appeared in the A.M.A.'s magazine *Hygeia*. The subjects covered are: The Common Cold, Backache, Headache, Hemorrhoids, Infection and Inflammation of the Nasal Sinuses, Allergy, Arthritis or Rheumatism, Neuritis, Varicose Veins, Anemia, Nephritis or Inflammation of the Kidneys, The Prostate Gland, High and Low Blood Pressure, Athlete's Foot, and Constipation. Each article is written by a recognized specialist in his particular field. The articles are plainly written and the average layman should have little if any trouble understanding the book.

The articles on athlete's foot, allergy, heart disease, high and low blood pressure, and anemia are particularly well written. It is regrettable that the value of a plain warm water enema has not been mentioned in the article on constipation.

Since this book is for laymen it will benefit every physician to read it carefully so that he may ascertain how much some of his patients can be expected to know about their diseases.

CLAYTON L. THOMAS.

**Clinical Roentgenology of the Digestive Tract.** By MAURICE FELDMAN, M.D., Assistant Professor of Gastroenterology, University of Maryland; Assistant in Gastroenterology, Mercy Hospital; Consulting Roentgenologist, Sinai Hospital. Second edition. Baltimore, The Williams and Wilkins Company. 1945. ix-769 pages. Illustrated. Cloth. Price \$7.00.

This book is recommended to graduate physicians who wish to survey the gastrointestinal tract in a rapid fashion.

On page 28, the author lists five "roentgen signs" of the Plummer-Vinson syndrome. Reference to the original work of these gentlemen would disclose that there are *no* roentgen signs whatsoever. The author apparently gained his information from an article appearing in 1942 which he lists in his references. This list could be improved by omitting the misinformation and supplying the original work of Plummer and Vinson. The "History of Medicine" still remains the most important subject of the medical curriculum although the authors of textbooks and deans of medical schools fail to recognize it. Dysphagia incidentally is not a roentgen sign.

It would be helpful if the roentgen findings in scleroderma were all contained in the same section of the book. Instead, on page 68 there is a description of scleroderma of the esophagus with illustrations of stricture and one reference to the literature. On page 749 more descriptions of roentgen findings of the esophagus and lower tract are added, with stricture of the esophagus not mentioned and three other references quoted. One would be more interested in what the authors experience has been or lacking that, which of the roentgen findings one should expect in view of the pathologic changes known to exist in this condition.

Figures 33 and 35 on page 32 are marked antero-posterior views when they have all the appearances of routine postero-anterior projections and one has been measured as though it were.

On page 121 we are told that "achalasia of the pylorus is a condition in which there is a failure of the pyloric sphincter to relax due to nerve degeneration of Auerbach-Meissner plexus". And on page 123 that "prepyloric ulceration, excluding tumor cases, are not any more malignant than ulcers elsewhere". Bold statements are these.

Under Meckel's diverticulum an illustration would help to visualize the roentgen findings. The discussion and references to the literature are appreciated as are those throughout the book.

The reviewer could go on indefinitely concerning the various subjects. Suffice it to say that careful proof reading by a friendly roentgenologist, a physiologist and a pathologist could make the "third edition" of this book the leader in the field. The author shows definitely that he is more familiar with the literature and the subject than writers of competitive volumes which have appeared recently.

F. B. M.



# VIRGINIA MEDICAL MONTHLY

*Official Publication of the Medical Society of Virginia*

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,  
*Editor Emeritus*

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## The New President Medical Society of Virginia

NO written record can ever accurately describe any individual. However, there are some whose character, personality, and walk in life are so clear cut and sure that they can be plainly seen and read by all. Dr. Julian Lamar Rawls is such a person. His biographical record suggests a background which should be given some credit for this.

Dr. Rawls was born in Carrsville, Virginia. His father was Dr. Gavin Rawls, an honored physician who was typical of the so-called country doctor of his day. His mother was Susan Norfleet Rawls. One ancestor was an officer in the army of the Revolution. His grandfather served in the Confederate Army. Dr. Rawls married Elizabeth Carlos of Baltimore and has two children, Mary Eleanor and Elizabeth Rawls Longua.

Dr. Rawls' education was not confined to schools although he did make excellent use of a number of outstanding institutions which included Franklin High School, University of Richmond, and the Medical College of Virginia, where he graduated in Medicine in 1904. He was an interne and later house surgeon at St. Vincent's Hospital in Norfolk and has practiced in Norfolk continuously since that time. From the beginning, his trend has been towards surgery which has occupied his entire time in recent years.

Dr. Rawls' contribution to medicine, as well as his outstanding personality and character, inevitably brought him into prominence in his profession as well as in the community as a whole. He is now or has been president of eleven different organizations which included: The Norfolk County Medical Society, President, 1922; Seaboard Medical Association of Virginia and North Carolina, President, 1939; Southeastern Surgical Congress, President, 1942; The American Association for the Study of Neoplastic Diseases, President, 1943; Norfolk Cancer Clinics, founder and president; Norfolk Community Fund, President, 1937-40; Tidewater Hospital Service Association, director and president since organization; Torch Club, President, 1943;

President of the DePaul Hospital Staff; President of the Norfolk Chapter of the Sons of the American Revolution, 1943; and now, President of the Medical Society of Virginia. He is a fellow of the American College of Surgeons and is a Baptist and a Democrat. He is a member of the Tri-State Medical Association of the Carolinas and Virginia; Seaboard Airline Railroad Surgeons; Surgeon U.S.P.H.S.R.; Lt. Com., U.S.N.R., 1934-40; Chairman of the Procurement and Assignment Service



JULIAN LAMAR RAWLS, M.D.,  
President, Medical Society of Virginia

for the Second Congressional District, World War II; member of the Norfolk Yacht and Country Club; and American Medical Association. Dr. Rawls has contributed many valuable articles to medical journals on professional subjects.

It is obvious that the Medical Society of Virginia has again chosen one of this state's distinguished sons on whom to bestow the highest honor at its disposal, the Presidency of the Medical Society of Virginia.

C. J. A.

### Another Mess of Pottage

SINCE the dawn of history a mess of pottage has been a term of reproach. It means something of little value that one foolishly accepts for something of great value in order to satisfy one's appetite for the time being. At one time the individual States of the Union had rights which were guaranteed by the Constitution of the United States. Some of these have been abolished by Constitutional Amendments, but this method is too slow and cumbersome for the present Federal Government. The mess of pottage technique has been perfected, and the original plan has been improved upon. Jacob got the pottage of red lentils out of his own garden when he bought Esau's

birthright. The Federal Government makes the States furnish the fixings and pays for the pottage out of the citizens' pockets. The usual formula requires the State to match Federal funds if it wishes to participate in the program that the Federal Government is promulgating. When the State puts up its part, then the Federal Government takes charge and says what can and cannot be done. If the State does not "come in", its citizens are taxed just the same, so that the majority of voters demand that the State participate so as to get back a part of his tax money. It matters not whether the individual likes pottage or not; he pays just the same, and considers himself lucky if he gets twenty cents worth of pottage for his tax dollar. In any event the State gives up the "right" that the Federal Government is after and loses that much of its birthright. The powers-that-be in Washington care not how big a mess of pottage is required in order to gain its end, for the citizens of the States pay the bill.

Just now Senator Pepper is cooking up a \$50,000,000 mess in the form of universal obstetric and infant care. He admits that the fifty million is inadequate, and is only for a start. The E. M. I. C. now costs \$43,000,000 a year, so it is evident that \$50,000,000 is just a drop in the bucket. The Senator is frank in saying that when the measure is put in operation, the Congress will from time to time vote funds to cover the deficit. If he asked for sufficient funds at once, he might fail to get enough votes to pass the bill. If the bill passes, the Secretary of Labor will have full control of the practice of obstetrics and pediatrics all over the country. The individual States will be only "yes" men carrying out the orders of the Children's Bureau.

#### Marion Sims and the First (?) Successful Operation for Vesico-Vaginal Fistula

THE leading article of the August number of *The Mississippi Doctor* is a flowery account of Marion Sims and other nineteenth century pioneers. The author tells of Sims' effort to secure to Crawford W. Long the credit of being the first to use surgical anesthesia, but omitted to say that this article first appeared in the *VIRGINIA MEDICAL MONTHLY* (4:81, 1877). We can forgive him this oversight although he mentions the other journals that published Sims' articles. But, when he says that Sims was the first to cure vesico-vaginal fistula, we really must protest. We quote "But genius is not easily discouraged and Sims continued until May, 1849, when with 'palpitating heart and anxious mind' he found that he had cured Anarcha—the first time in the history of the world that an operation for vesico-vaginal fistula had been performed successfully." Marion Sims' great fame as a gynecologist does not need such misstatements. The record shows that John Peter Mettauer of Virginia had a successful case in 1838, George Hayward of Boston one in 1839, and Joseph Pancoast of Philadelphia one in 1847. About the same time (1845) Jobert de Lamballe in France reported that he was able to cure 13 cases and had only two deaths. Mettauer reported his first case in the *Boston Medical and Surgical Journal* (22:154, 1940). In 1847 he reported in the *American Journal of Medical Sciences* (14:117, 1847) six cases and was convinced that every case could be cured. In 1855 he reported (*Virginia Medical and Surgical Journal* 4:445, 1855) that he had cured 27 cases and had found two cases that were inoperable. He reported his cases in a matter of fact sort of way. His technic was not unlike that which Marion Sims later adopted. With the patient in the lithotomy position the fistula was exposed by retractors in the hands of two of his students. The edges were denuded with curved scissors and apposition was secured with pure lead thread. A straight silver retention catheter was placed in the urethra and held in place by a tape fastened front and back to an abdominal band. The patient was kept on her side during the after care.



### Our Advertisers

During the war when our advertisers had little if anything to sell they continued to buy advertising in the MONTHLY. Needless to say we appreciate the very necessary support of our advertisers. Without them, the cost of the MONTHLY to the members of the Medical Society of Virginia would be prohibitive. Now that the war is over, and the manufacturers are beginning to have something to sell to the public, they are beginning to look for results from their advertising. Many of our advertisers in this month's journal are asking our readers to write for reference books, literature or samples. Won't you show them that you read the MONTHLY by responding to their requests? It costs only a few postal cards.

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## Society

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### The Southwestern Virginia Medical Society

Held its Fall meeting at Governor Tyler Hotel, Radford, October 4, with the president, Dr. W. A. Porter of Hillsville presiding. The following read papers at the afternoon session:

Dr. W. F. Hatcher of Roanoke—The Eye in General Practice.

Dr. R. M. DeHart, Radford—Management of Adenomatous Goiter.

Dr. H. H. Ware, Jr., Richmond—Ectopic Pregnancy.

Dr. A. D. Hart, University—Psychosomatic Medicine.

Following refreshments and dinner, the program was resumed and papers were presented by:

Dr. Arthur M. Shipley, Baltimore—Diagnosis of Surgical Abdomen.

Dr. J. Edwin Wood, Jr., University—Differential Diagnosis and Treatment of Coronary Disease.

Dr. W. A. Porter, Hillsville—(President's Address)—Some Observations on Pending Medical Legislation and Medical Trends.

### Patrick-Henry Medical Society.

The business meeting of this Society was held at Broad Street Hotel, Martinsville, October the 12th, at which time the following officers were elected for the ensuing year: President, Dr. T. H. Dickerson, Martinsville; vice-president, Dr. J. T. Shelburne, Critz; and secretary-treasurer, Dr. W. N. Thompson, Stuart.

### Norfolk County Medical Society.

The following is a list of subjects and out-of-town speakers to be presented by the Surgical Section before this Society, for three months:

November 26: "Carcinoma of the Rectum": Dr. Richard B. Cattell, Surgeon, Lahey Clinic, Boston.

December 17: "The Surgical Treatment of Duodenal Ulcer by Trans-Thoracic Vagotomy and of Cardiospasm by Cardioplasty": Dr. Keith Grimson, Assistant Professor of Surgery, Duke University, Durham, N. C.

February 25: "Skin Grafting": Dr. Kenneth L. Pickrell, Associate in Surgery, Duke University, Durham, N. C.

### Mid-Tidewater Medical Society.

Dr. W. S. Cox of West Point presided at the annual meeting of this Society in Gloucester on October the 9th, at which time Dr. C. C. Haskell of Richmond presented a paper on Cardiac Stimulants.

At the business session, Dr. W. H. Springall of Gloucester was elected president for the ensuing year and Dr. M. H. Harris of West Point was re-elected secretary-treasurer. Vice-presidents from the various counties are: Dr. P. G. Pearson, Aylett; Dr. E. L. W. Ferry, Millers Tavern; Dr. R. D. Bates, Newtown; Dr. H. A. Tabb, Gloucester; Dr. R. B. Bowles, Mathews; Dr. J. R. Parker, Providence Forge; Dr. Clarence Campbell, Sparta; and Dr. Horace Hoskins, Saluda.

## News

### Medical Society of Virginia.

Although no general meeting of the Society could be held this year, due to lack of hotel facilities, the Society held business sessions at Hotel Roanoke on October 22 and 23, with a registered attendance of eighty-six. Dr. H. B. Mulholland of the University of Virginia presided over the Council and both sessions of the House of Delegates, minutes of which will be published in the December MONTHLY. Shortly before adjournment, Dr. Julian L. Rawls of Norfolk was installed as president for the ensuing year, and Dr. William L. Powell of Roanoke was named president-elect. Vice-presidents were elected as follows: Dr. J. D. Hagood of Clover, Dr. W. Lowndes Peple of Richmond, and Dr. W. C. Caudill of Pearisburg. The retiring president, Dr. Mulholland, was named delegate to the American Medical Association for years 1946 and 1947, with Dr. Walter B. Martin of Norfolk as alternate.

This was time for election of councilors from the odd numbered Congressional Districts, and the following were elected to this position for two years: Dr. R. B. Bowles of Mathews; Dr. Carrington Williams of Richmond; Dr. Walter A. Porter of Hillsville; Dr. Alex F. Robertson, Jr., of Staunton; and Dr. F. H. Smith of Abingdon.

It was voted to accept the invitation of the Princess Anne County Medical Society and of the Cavalier Hotel to hold the 1946 meeting at Virginia Beach.

### Promotions.

The following promotions of Virginia doctors in the services have recently been noted:

Dr. Edward H. Williams, Richmond, to Colonel, AUS.  
Dr. Ben L. Boynton, Norfolk, to Lieutenant-Colonel, AUS.  
Dr. Fred M. Jacobs, Roanoke, to Lieutenant-Colonel, AUS.  
Dr. Lemuel E. Mayo, Jr., Portsmouth, to Major, AUS.  
Dr. Eldridge C. Simmons, Roanoke, to Captain, AUS.  
Dr. Charles A. Young, Jr., Roanoke, to Captain, AUS.  
Dr. Edw. E. Haddock, Richmond, to Lieutenant, USNR.

### Dr. F. B. Mandeville,

For eleven years professor of radiology and roentgenologist at the Medical College of Virginia, has resigned and accepted a similar position at the Baltimore City Hospital.

### Lieutenant Commander Chester L. Riley, MC., USNR.,

Of Winchester, serving with motor torpedo boat forces, accompanied the assault forces during the invasion of Borneo at Balikpapan and was present at the time of surrender of the Japanese in that area to the Seventh Australian Division. Prior to this operation Dr. Riley served in the South Pacific area, Australia, and the campaign of Philippine liberation. Civilians and prisoners of war in the East Indies area, as in others under Japanese occupation, were found to be suffering from severe malnutrition, intestinal disorders, and tropical diseases, with a high incidence of yaws, malaria and intestinal parasites.

### Colonel Edward H. Williams.

With notice from the Public Relations Office of the recent promotion of Colonel Williams, came the following interesting story of his activities since entering the service:

In August 1942, he was assigned the huge task of organizing a neuro-psychiatric service within the AAF hospital, which he completed in the spring of 1943. With a staff of administrative and medical officers, the department became almost a hospital within itself. Overseas returnees diagnosed as mild neurosis, combat fatigue and other mental states are first interviewed individually by Col. Williams, who is chief of Psychiatric Services division. He, in turn, assigns specialists, who review cases and prescribe treatment for the patients.

Unique in the psychiatric service is the convalescent program. Since its opening, the colonel has laid stress on art and metal crafts, music, reading, entertainment and every type of sport, as a means of rehabilitating the patient. Statistics now show that nearly every patient returns to a normal, productive life upon completion of his treatment.

### Mr. Joe W. Savage,

For seventeen years executive secretary of the West Virginia State Medical Association, has accepted a position with the National Foundation for Infantile Paralysis with headquarters in New York City. He has recently been released from active duty as Major with the Army Air Forces after serving for over three years with the AAF training

command for navigators at various air fields in Texas.

Mr. Charles Lively is now executive secretary of the West Virginia Association.

### **Southern Medical Association.**

The Victory Meeting of this Association will be held in Cincinnati on November 12-15. The scientific program will begin at noon on the 12th and will continue through the 15th. The twenty-one sections will each have a full half-day session so staggered that there will be only three sections meeting at the same time. There will be the usual general public session on Tuesday evening, with the address of the President and followed by the President's reception and ball. On Wednesday evening there will be a general clinical session.

General headquarters will be the Netherland Plaza Hotel. Registration, information, technical, scientific and hobby exhibits, general sessions and most of the section meetings will be held there.

If you plan to attend this meeting and have not made reservations, get in touch with the Hotel Committee, Southern Medical Association, Dr. Robert L. Biltz, Chairman, 910 Dixie Terminal Building, Cincinnati 2, Ohio, immediately as hotel rooms available for this meeting are limited.

### **Dr. Charles H. Dow,**

Recently released from service in the Armed Forces, is taking special work in otolaryngology at the Graduate School of Medicine, University of Pennsylvania, Philadelphia.

### **Refresher Courses in General Medicine.**

The Department of Medicine of the University of Virginia in conjunction with the Medical College of Virginia is planning to offer an intensive two week Refresher Course in General Medicine every three months for the next year. These courses will be comprised of lectures, clinics, ward rounds, clinicopathologic conferences and round table discussions. The first course is planned from December 3 to December 15, 1945, at the University of Virginia and any physician wishing further details should address Box 1725, University Station, Charlottesville, Virginia. Those desiring information about the course to be given by the Medical College of Virginia in March and September should address

Dean J. P. Gray, Medical College of Virginia, Richmond, Virginia.

While this course is planned primarily for returning veterans, civilians will be accepted insofar as places are available up to a limit of fifty.

### **Motion Pictures for Society Programs.**

"Physical Diagnosis" is the title of a motion picture recently acquired by the American Medical Association. It was prepared by Drs. Gordon B. Myers, Fred J. Margolis and Muir Clapper of Wayne University College of Medicine, Detroit. It requires about four hours to run, but portions of it may be used at different times.

Other motion pictures suitable for meetings of county or state societies are also available. Reservations should be made as far as possible in advance of the meeting with Thomas G. Hull, Ph.D., Director of the Scientific Exhibit, 535 North Dearborn Street, Chicago 10, Illinois.

### **Dr. and Mrs. S. E. Massey**

Have returned to their home in Lakeland, Florida, for the winter, after spending the summer in the mountains of North Carolina, Virginia and West Virginia.

### **Released from Service.**

In addition to names previously published, we have been advised of the release of the following members from duty in the services:

Dr. Walter P. Adams, Norfolk.  
Dr. D. Coleman Booker, Richmond.  
Dr. O. D. Boyce, Rural Retreat.  
Dr. Alexander G. Brown, III, Richmond.  
Dr. Charles H. Dow, Chilhowie.  
Dr. Charles A. Easley, Jr., Chatham.  
Dr. William J. Ellis, Covington.  
Dr. Thomas S. Ely, Jonesville.  
Dr. E. J. Haden, Ore Bank.  
Dr. Guy W. Horsley, Richmond.  
Dr. Ira H. Hurt, Roanoke.  
Dr. E. C. Jamison, Rocky Mount.  
Dr. Marcellus A. Johnson, Roanoke.  
Dr. Wm. M. Junkin, Fredericksburg.  
Dr. G. A. L. Kolmer, Salem.  
Dr. C. H. Lupton, Norfolk.  
Dr. C. F. Manges, Blacksburg.  
Dr. J. L. Mann, Hampton.  
Dr. J. R. Massie, Jr., Richmond.  
Dr. Charles Nelson, Richmond.  
Dr. E. W. Perkins, Richmond.  
Dr. R. C. Potter, Marion.



Dr. Benjamin W. Rawles, Jr., Richmond.

Dr. Robert J. Scott, Onancock.

Dr. Girard V. Thompson, Chatham.

Dr. Elam C. Toone, Jr., Richmond.

Dr. William R. Watkins, South Boston.

Dr. Thomas Duval Watts, Richmond.

Dr. B. K. Weems, Waynesboro.

Dr. Ayer C. Whitley, Palmyra.

If there are others who have been discharged, please notify this office, so the membership files of the Society may be kept to date.

#### **Dr. A. L. Carson, Jr.,**

Has resumed his duties as Director of the Bureau of Maternal and Child Health of the State Health Department after a three months' leave of absence, during which time he was Acting Obstetrician-in-Chief of the Mary Imogene Bassett Hospital, Cooperstown, N. Y.

#### **Salmon Lecture Series.**

Dr. Roy Graham Hoskins, Salmon Memorial Lecturer for 1945, will deliver his lecture series, "The Biology of Schizophrenia", at 8:30 P. M. on the three successive Friday evenings of November 2nd, 9th, and 16th, at the Academy of Medicine, 2 East 103rd Street, New York City. Dr. Hoskins is internationally known for his contributions to both the neuro-endocrinological and physiological fields, has had many scientific affiliations and has been active in the journalistic field.

#### **Dr. Sidney Trattner,**

Recently with the Virginia Commission for the Blind, is now engaged in the private practice of ophthalmology in Fredericksburg.

#### **The Second Inter-American Congress of Radiology,**

Which was scheduled to be held in Havana next January, has been postponed to November 17-22, 1946. Further information with regard to the Congress may be obtained from the American College of Radiology, 20 North Wacker Drive, Chicago 6, Ill.

#### **Dr. H. B. Luttrell**

Announces his removal from Delaplane to Pualaski, where he is engaged in practice.

#### **An Aid to Hospitals and "Dischargees".**

Women have been stationed at five separation centers for the armed forces, with a view to assisting women dischargees in securing work, and they can be of great assistance to hospitals who need nurses, nurses' aides, technicians and other personnel. The separation centers are located at Fort Deal, California; Fort Bragg, North Carolina; Camp Dix, New Jersey; Fort Sam Houston, Texas; and Fort Sheridan, Illinois. Hospitals needing personnel are urged to communicate with the separation centers. These women advisors can be of mutual benefit to the hospitals and the young women who are now looking for post-war work.

#### **"They Finished Their Job—Let's Finish Ours!"**

The Victory Loan—last of the war loan drives—begins October 29 and ends December 8. The question will be asked "Why should people buy Victory Bonds after the war is over?" This is answered by the fact that the Treasury needs money for the following purposes:

1. Care of the wounded and rehabilitation of veterans.
2. Cancellation and termination of war contracts.
3. To prevent inflation.
4. Bringing men home.
5. Maintaining armies of occupation.

For these purposes and for self interest, every one is urged to buy.

#### **Dr. A. Warren Rucker,**

Located for sometime at Fieldale, is now in Nashville, where he recently underwent an operation. After recovery, he will take a postgraduate course in pediatrics, following which he will locate for practice in Martinsville.

#### **Annual Clinical Conference.**

The Chicago Medical Society will hold its annual clinical congress at the Palmer House, Chicago, March 5, 6, 7, 8, 1946. All physicians are invited to attend this conference and hear outstanding specialists from all sections of the country discuss subjects of major interest.

#### **Seaboard Medical Association of Virginia and North Carolina.**

Due to the fact that the reconditioning of the

Cavalier Hotel could not be completed in time, arrangements have been made to hold the 50th anniversary meeting of this Association at Pinewood Hotel, Virginia Beach, and dates will be December 11, 12 and 13 instead of those first announced. Although it is announced that there is ample room, reservations should be made in advance. An excellent social and scientific program is being arranged. Dr. A. A. Burke of Norfolk is president and Dr. Clarence Porter Jones of Newport News secretary.

#### **Married.**

Captain Nelson Montgomery Smith, MC., AUS., class of 1943, University of Virginia, Department of Medicine, and Miss Catharine Lee Palmer, Urbanna, October 11th.

Dr. F. B. Spencer, Jr., Salisbury, N. C., and Miss Ernestine Lewis, Tazewell, September 22nd. Dr. Lewis is a graduate of the Medical College of Virginia, class of '45, and is now serving an internship at the New York City Hospital.

#### **Winchester Memorial Hospital to Expand.**

According to announcement made by Dr. Hunter H. McGuire, President of the Board of Directors, arrangements have been completed for the enlargement of this hospital in Winchester. The expansion program will be undertaken in three phases. The first will be to provide thoroughly modern operating room units, a laundry, and enlarged kitchen and dining room space. Following this, plans provide for adding from 80 to 100 patient beds and enlarging the work space for the various departments of hospital activity. A modern pathological department will also be installed with the services of a full-time pathologist. Work will be started on the hospital at the earliest possible moment that construction material and equipment are available.

#### **Dr. William Bickers**

Of Richmond sailed from New York October 16th on the *Gripsholm*, bound for the American University of Beirut, Beirut, Lebanon. Upon request of the Near East College Association, he will act as Chairman of the Department of Obstetrics and Gynecology on a visiting basis, to aid in the post-war reorganization of the University Medical School. Dr. Bickers expects to return in the Spring.

#### **The West Virginia State Medical Association**

Announces that its 1946 meeting will be held at Hotel Prichard, Huntington, May 13, 14 and 15.

#### **Dr. Guy W. Horsley,**

Richmond, who was recently released from the Service, has been awarded the Legion of Merit, the Army's second highest award for achievement. He was chief of the surgical service of the 45th General Hospital and the award is being made for "exceptionally meritorious conduct in the performance of outstanding services". Dr. Horsley was especially cited for his devotion to duty "during the times of greatest stress immediately following the drive on Rome and the invasion of Southern France".

Dr. Horsley, who has been chief of the surgical service at McGuire Hospital since his return to this country, was the winner in the recent tennis tournament staged on the courts of that Post.

#### **Dr. Patrick P. T. Wu,**

Rochester, Minnesota, a graduate of the Department of Medicine, University of Virginia, class of 1928, will give a series of lectures for post-graduate instruction in surgical diagnosis for the Oklahoma State Medical Association. These courses are being given to approximately 1,000 physicians in the State of Oklahoma.

#### **Dr. J. Lawson Cabaniss**

Of Roanoke, who has been in active service since September 1942 and now a Commander in the Medical Corps, USNR, is stationed at the Navy Yard Dispensary, Washington, D. C. where he is Head of the Eye, Ear, Nose and Throat Clinic.

He returned to the States in January after an 18 months tour of duty in the S. W. Pacific where he was stationed respectively on New Caledonia, Guadalcanal and Bougainville. At the latter he was Head of the Eye, Ear, Nose and Throat Department in a base hospital.

#### **News from the University of Virginia, Department of Medicine.**

The Virginia Society for Crippled Children and Disabled Adults, on October 2nd, awarded to Dr. Hugh Page Newbill for the work of the Anti-Convulsive Clinic the sum of \$7,500 for the year

1946. From other sources so far this year this clinic has received donations in the amount of \$2,629.

Dr. Gayle Crutchfield and Dr. Fletcher D. Woodward spoke before the Ear, Eye, Nose and Throat Society in Raleigh, North Carolina, on September 27th.

The sum of \$10,000 has been provided in the will of the late Mrs. Sallie B. Twyman as a memorial to her late husband for the establishment in the Medical School of the Frederick W. Twyman Fund, the income to be applied for research in cardiovascular disease under the direction of the Department of Internal Medicine.

#### **Dr. Carl W. LaFratta,**

Richmond, who has just been released from Service in the Armed Forces, has been appointed acting medical director of Pine Camp Hospital, to fill the vacancy created by the resignation of Dr. B. B. Bagby, Jr., who has moved to Milledgeville, Georgia. Dr. LaFratta was on the clinical staff of Pine Camp before entering the army, and will hold the present position until a permanent medical director is obtained.

#### **The 12th Annual Post-Graduate Course,**

Sponsored by the Virginia Society of Ophthalmology and Oto-Laryngology, will be held in the Baruch Auditorium of the Medical College of Virginia, December 3, 4, 5, and 6. The speakers on Oto-Laryngological subjects will be Dr. Oscar V. Batson, Philadelphia; Dr. French K. Hansel, St. Louis; Dr. A. C. Furstenberg, Ann Arbor, Mich; Drs. Walter E. Dandy and Stacy Guild of Baltimore; Dr. Julius Lempert, New York; and Dr. George E. Shambaugh, Chicago. Ophthalmologists on the program are: Dr. Frank B. Walsh, Baltimore; Drs. Raymond L. Pfeiffer and Daniel B. Kirby of New York City; Dr. Peter C. Kronfeld, Chicago; and Dr. James N. Greear, Washington, D. C.

For further information, communicate with Dr. E. Tribble Gatewood, Professional Building, Richmond 19, Va.

#### **For Rent—**

In Newport News, the office of the late Dr. W. J. Knight. Good opening for young doctor just beginning practice or for a doctor desiring to make a change. Contact Mrs. W. J. Knight, 2405 Chestnut Avenue, Newport News, Va. (Adv.)

#### **Wanted—**

Association in Group Practice by University of Virginia graduate with three years hospital training in and two years private practice of Pediatrics. Four years experience in general medicine during recent Army Service. Address "Pediatrician", care this journal, 1200 East Clay Street, Richmond 19. (Adv.)

#### **Established Hospital for Lease.**

A Sanatorium for nervous, mental, alcoholic and drug cases doing an excellent business to a reputable physician or medical group. Dr. E. W. Stokes, 923 Cherokee Road, Louisville 4, Kentucky. (Adv.)

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## **Obituaries**

#### **Dr. Hugh Carter Henry,**

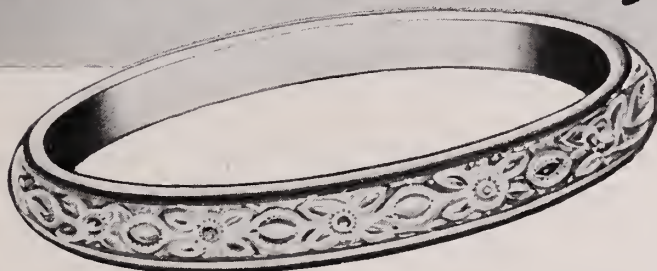
Commissioner of the State Department of Mental Hygiene and Hospitals, died at his home in Richmond on October 14th. He was seventy years of age and graduated from the Medical College of Virginia in 1896. In 1903, Dr. Henry was appointed first assistant physician at the Central State Hospital in Petersburg, and in 1924 was made superintendent of the institution, succeeding the late Dr. William F. Drewry. He continued as superintendent for more than ten years, resigning to accept the position as first commissioner of the State Department of Mental Hygiene and Hospitals. Dr. Henry was regarded as one of the outstanding psychiatrists in this country. He was a member of the American Psychiatric Association, the Southern Psychiatric Association, and a past president of the Virginia Neuropsychiatric Society. He had been an active member of the Medical Society of Virginia for forty-eight years. His wife and two children survive him.

#### **Dr. Frederick Gochnauer,**

Of Upperville, for forty years a practicing physician in that section, died October 9. He was sixty-six years of age and a graduate in medicine from the former University College of Medicine, Richmond, in 1903. After serving an internship at the college hospital, he returned to his home in Loudoun County where he had since practiced. He was a member of the Medical Society of Virginia and several other medical organizations, and a high ranking Mason. His wife and two daughters survive him.



# There is no *Universal Size*



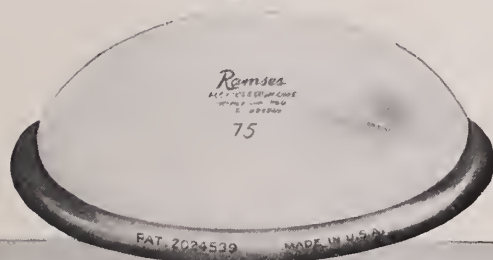
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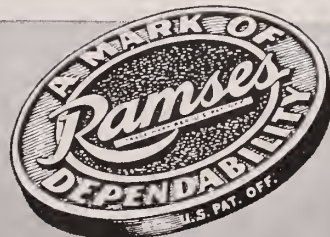
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# BRIEF HISTORICAL NOTES ON MEAD'S CEREAL, PABLUM AND PABENA

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**H**AND in hand with pediatric progress, the introduction of Mead's Cereal in 1930 marked a new concept in the function of cereals in the child's dietary. For 150 years before that, since the days of "pap" and "panada," there had been no noteworthy improvement in the nutritive quality of cereals for infant feeding. Cereals were fed principally for their carbohydrate content.

The formula of Mead's Cereal was designed to supplement the baby's diet in minerals and vitamins, especially iron and thiamine. How well it has succeeded in these functions may be seen from two examples:

(1) As little as one-sixth ounce of Mead's Cereal\* supplies over 50% of the iron and 20% of the thiamine minimum requirements of the 3-months-old infant. (2) One-half ounce of Mead's Cereal furnishes all of the iron and 60% of the thiamine minimum requirements of the 6-months-old baby.

That the medical profession has recognized the importance of this contribution is indicated by the fact that cereal is now routinely included in the infant's diet as early as the third or fourth month instead of at the sixth to

twelfth month as was the custom only a decade or two ago.

In 1933 Mead Johnson & Company went a step further, improving the Mead's Cereal mixture by a special process of cooking, which rendered it easily tolerated by the infant and at the same time did away with the need for prolonged cereal cooking in the home. The result is Pablum, an original product which offers all of the nutritional qualities of Mead's Cereal, plus the convenience of thorough scientific cooking.

During the last twelve years, these products have been used in a great deal of clinical investigation of various aspects of nutrition, which have been reported in the scientific literature.

Many physicians recognize the pioneer efforts on the part of Mead Johnson & Company by specifying Mead's Cereal and PABLUM—and also the new Pablum-like oatmeal cereal known as PABENA.

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\*Pablum, the precooked form of Mead's Cereal, has practically the same composition: wheatmeal (farina), oatmeal, cornmeal, wheat embryo, beef bone, brewers yeast, alfalfa leaf, sodium chloride, and reduced iron.

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# Virginia

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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Christmas Greetings  
And Best Wishes To  
Our Readers Everywhere

*December 1945*






## **BY INJECTION**

subcutaneously or intramuscularly, ADRENALIN provides rapid symptomatic relief in asthmatic paroxysms; is useful in the prevention and treatment of other allergic reactions; localizes and prolongs the action of local anesthetics. Intravenously, it is used in shock and anesthesia accidents.



## **BY APPLICATION**

for its vasoconstrictor action in hemorrhage, ADRENALIN permits better visualization of the field, and aids in the diagnosis and treatment of certain conditions encountered in ear, nose and throat practice.



## **BY INSTILLATION**

into the nasal passage, ADRENALIN produces prompt decongestion; in the eye ADRENALIN decreases vascular congestion, and aids in the location of foreign bodies.



## **BY INHALATION**

orally, ADRENALIN relieves severe attacks of bronchial asthma by relaxing the bronchial muscles.

# Virginia Medical Monthly

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Vol. 72, No. 12.  
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RICHMOND, VA., DECEMBER, 1945

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25 CENTS A COPY

## CRYSTALLURIA IN THE SOUTHWEST PACIFIC\*

HERBERT C. JONES, LT. COLONEL, M.C.,  
PAUL L. FLYNN, CAPTAIN, M.C.,  
JOSEPH E. GLASSBERG, 1ST LT., SN.C.

Interest in the certain phases of kidney colic which will be discussed tonight was first aroused by the observation of quite a number of such cases while with another General Hospital in New Guinea. There we were particularly struck by the relatively few calculi demonstrated in a considerable number of rather typical cases of kidney colic. I believe in about sixty such cases only three stones were proven by the usual urologic methods. A few more cases indicated by their history that they might have passed a stone but they were not at all certain. Most of these cases came to us with a history of mild kidney colic, little frequency of urination, and practically no history of dysuria. Laboratory records on practically all of these cases showed microscopic blood which, by the time the patients reached our hospital, had entirely cleared up. In fact, practically all symptoms had cleared up with the exception of costo-vertebral tenderness. Complete examinations were done on these patients including several urine studies, intravenous pyelograms and cystoscopic examinations.

When we reached the Philippines quite a few of these mild kidney colic cases were admitted to the hospital soon after our arrival. With our New Guinea experience in mind we decided to review a series of cases here.

Our first cystoscopic examination was done on the 23rd of January, 1945, and the series of cases reviewed tonight were those handled between this date and April 23, 1945 (three months).

In this series there were one hundred and forty-one cases considered on which there were one hundred and forty-four intravenous pyelograms and sixty-eight cystoscopic examinations performed. One hundred and ten of these one hundred and forty-one cases presented varying degrees of kidney colic. We use the term kidney colic to cover the symptoms usually occurring from the damming back of urine in the kidney pelvis, tenderness and pain over the kidney with the pain radiating down the flank along the course of the ureter and usually into the testicle on that side. This pain is most often accompanied with varying degrees of frequency of urination and dysuria. Microscopic or macroscopic blood may be present. The common causes of kidney colic, as we all know, are (1) calculi, (2) infection, (3) blood clots, (4) kinks, (5) strictures, (6) new growths, (7) spasms of the ureter, (8) extrinsic masses or growths such as a pregnant uterus or fibroid tumor, (9) aberrant blood vessels.

Intravenous pyelograms were done on all the cases in this series. Cystoscopic examinations were made in those cases where the intravenous pyelogram was not entirely diagnostic or where the symptoms had persisted longer than a very short time or where blood was present in the urine in several different specimens. It might be stated that cystoscopic examinations in this series added very little information that was not already known, provided the intravenous pyelograms had been satisfactory.

As was stated before there were one hundred and ten cases with a fairly accurate history suggestive of kidney colic. We classify them according to their probable cause:

\*Read before the Leyte (Philippine Islands) Medical Society, 10 May, 1945.

1. Calculi—20 cases
2. Trauma to the kidney—8 cases
3. Aberrant blood vessels—4 cases
4. Spastic ureters—2 cases
5. Blood clots, cause undetermined—2 cases
6. Kinks—one case
7. Stricture—1 case
8. Renal colic, cause undetermined—72 cases.

It is this latter group that we wish to discuss later on.

Of the twenty cases of calculi, four had passed their stone before admittance to the hospital, but their history was so definite as to make us believe that they certainly had passed a stone. Of the sixteen remaining cases, four were removed surgically from the ureter and nine were removed by cystoscopic manipulation. The remaining three cases were evacuated because of the fifteen day evacuation policy existing in this hospital at that time. Eight of the stones removed were examined chemically, six of which were found to be oxalate stones, one a uric acid stone, and one a calcium carbonate stone.

There were eight cases of trauma to the kidney, three of which required nephrectomies. Serial intravenous pyelograms were a big-help to us in evaluating these cases. In two cases of ruptured spleen, intravenous pyelograms enabled us to make a differential diagnosis.

There were four cases of large hydronephrosis due to aberrant blood vessels. Two of these cases gave a history of from five to seven years' duration and the other two had practically no symptoms before the onset of the present illness. In three of these cases the kidney was not functioning and a nephrectomy was done. In one case, in which the kidney was functioning, the aberrant blood vessel was severed and later an intravenous pyelogram revealed that the kidney's functioning had improved and that the hydronephrosis had reduced in size.

Two cases were proven by cystoscopic examination to be spastic ureters. We are inclined to think that these had the same etiology as the large group of cases to be discussed later.

As stated before, two cases of kidney colic were due to blood clots the cause of which we do not definitely know. The bleeding was unilateral. Many examinations for acid fast bacilli were negative and there were no filling defects in pyelographic studies. One to two weeks later the blood cleared up and

the patients were returned to duty.

The one cause of kink was due to a moderate ptosis of the kidney and after a short time in the hospital the patient was returned to duty.

The case of stricture, which occurred at the ureteral pelvic juncture, destroyed the kidney and required a nephrectomy.

We now come to the large group of cases in this series, namely, seventy-two out of one hundred and ten which heretofore we have classified as kidney colic, cause undetermined.

In reviewing the records of these seventy-two cases at least fifty presented classical evidence that the condition was due to a damming back of urine into the kidney pelvis; all had pain in the kidney region radiating down the flank, and, in most cases, down to the testicles. The cases were usually mild and were accompanied by a little frequency of urination but practically no dysuria and fever was rare. Records showed that all had had microscopic, a few macroscopic blood. Oxalate crystals were usually present in the urine. The attacks usually lasted from one to two hours and only a few had required more than one hypodermic of morphine. Quite a number were symptom free when they reached us. A few, however, were seen during the attack and these showed little or no function of the kidney when an intravenous pyelogram was done. Two to three days later normal pyelograms were obtained and patients were comfortable. On physical examination there was tenderness over the kidney and along the ureter and on cystoscopic examination a reddened ureteral orifice was seen and quite a few times crystals were seen being discharged from the ureter. Retrograde pyelograms and urinalyses were negative if some time had elapsed after the attack, but, if the attack was recent, microscopic blood and oxalate crystals were found in a strongly acid urine which had a high specific gravity. In only a few cases has the pain in the kidney region lasted longer than a few days and two or three of these lasted as long as three weeks. All cases returned to duty with normal findings in a relatively short time. We have often wondered if there could be any connection between this observation and the highly acid urine which generally prevails here, especially in view of the fact that colon bacilli, the most common organism in kidney infection, does not thrive in a strongly acid urine.

In an effort to find some explanation for the



cause of these mild cases of renal colic which so promptly cleared up with so little treatment, we turned to the laboratory for help. In a review of five hundred routine urinalyses the average specific gravity was found to be 1.022 and the pH concentration was 6.1. In reviewing this group of urines we were astounded by the fact that oxalates appeared in the urine so often and phosphates were seen so seldom. This is exactly the reverse of what we were accustomed to seeing in the States. In two hundred urines which showed oxalate crystals, the average specific gravity was 1.025 and the pH concentration 5.7.

In thirty cases of this rather mild kidney colic more extensive studies were made. In each case twenty-four hour specimens were sent to the laboratory, each urination being in a separate bottle. The average specific gravity in these cases was 1.021 and the average pH concentration was 5.6. In all cases, with the exception of one which showed phosphates, oxalate crystals were present. This one case will be discussed later on. The following results were obtained or observations made:

1. In the Southwest Pacific there is a diminished daily output of urine which is probably due to excessive sweating or possibly a lower intake of fluids. The output in this series varied from eight hundred to a thousand c.c.

2. As stated before, the average specific gravity in this series was 1.025 and pH concentration 5.7.

3. Chemical analysis of the urine revealed:

- a. A low chloride excretion of 9.5 grams in 24 hours when we usually consider 12 grams as normal.
- b. A normal uric acid excretion of .6 grams when we usually consider .6 to .7 grams as normal.
- c. A normal urea of 28 to 30 grams in 24 hours.
- d. A normal phosphate excretion of 2.2 grams.
- e. A marked increase in excretion of oxalates as calcium oxalate and non-dissociated oxalic acid. We usually consider the excretion of fifteen to twenty milligrams of oxalates in twenty-four hours as normal. In this study the excretion of thirty to seventy milligrams was the rule.

One case, referred to previously, in which six samples of urine were taken during the twenty-four

hour period, showed a distinct variation in pH and oxalate concentration. The early morning specimen of 152 c.c. had a specific gravity of 1.027, a pH of 5.5 and an oxalate content of 20.1 mgs., while a specimen of 156 c.c. taken at 1400 showed a specific gravity of 1.031 and an alkaline pH of 7.2 and a content of .128 mg. of phosphates and .2 mg. of oxalates. The urine in the ensuing specimen gradually changed to the acid and the following morning specimen of 180 c.c. had a pH of 5.0, a specific gravity of 1.028, and an oxalate concentration of 22.3 mgs. We can not definitely give the reason for the findings in this case, but it is of interest to note that there was an increase of phosphate in the presence of alkaline urine.

Further in the study we have found that when the pH of urine decreased and the urine became more acid the oxalate content was increased far above normal. The probable causes of this phenomenon are open to discussion. This urine, on standing, deepened in color and became more acid. Whether this increase in acidity was caused by an increase in the acid phosphate, an increase of oxalate ingestion or fermentation remains to be investigated.

The increase of oxalates in this study of urine may be due:

1. To the excessive metabolism of body protein.
2. Incomplete oxidation of carbohydrates.
3. The ingestion of excessive oxalates in our food. We doubt if this exists.

We hope to continue this investigation. It would be of particular interest to us to make a similar study after diets high in oxalates were fed. Also, we hope to continue our studies to show the effects of forced fluids on oxalate excretion and what effect, if any, the ingestion of alkali would have on the problem. All of these patients have cleared up simply on forced fluids.

We know that the passage of crystals down the ureter can cause irritation with the resultant spasm of the ureter and kidney colic. Either calcium oxalate crystals in a very acid urine of high specific gravity or phosphate crystals in an alkaline urine with a high specific gravity may give this picture.

As a discussion of fact, much authoritative data on the subject has maintained that the so-called phosphaturias do not represent an increase in phosphate content and high acid pH; we have found an actual quantitative increase of oxalate to be the gen-

eral rule.

Oxalic acid is a constituent of normal urine, about 15-20 mgs. being eliminated in twenty-four hours in the temperate zone. It is present in the urine as calcium oxalate which is kept in solution through the medium of the acid phosphates.

"The origin of oxalic acid content of the urine is not well understood. When ingested it is eliminated at least in part unchanged; therefore, since many of the common articles of diet, e.g., asparagus, apples, cabbage, grapes, lettuce, rhubarb, spinach, tomatoes, etc., contain oxalic acid (oxalates), it seems probable that ingested food supplies a portion of the oxalic acid found in the urine. There is also experimental evidence that part of the oxalic acid of the urine is within the organism in the course of protein and fat metabolism. It has also been suggested that oxalic acid may arise from an incomplete combustion of carbohydrates, especially under certain abnormal conditions. Pathologically, oxalic acid is found to be increased in amount in

diabetes mellitus, in organic diseases of the liver, and in various other conditions which are accompanied by derangement of the oxidation mechanism. An abnormal increase of oxalic acid is termed oxaluria. A considerable increase in oxalic acid may be noted unaccompanied by any other apparent symptom. Calcium oxalate crystallizes in two distinct forms, dumbbells and octahedra." (Hawks & Bergnan, page 618).

In conclusion, oxalate crystals appear more frequently in urine in the Southwest Pacific than in the United States, and it is our opinion that this is the cause of the many kidney colic cases which we have seen. We feel, further, that the relative infrequency of urinary infection is due to the strongly acid highly concentrated urine generally prevailing here. The adequacy of ample fluids at all times for troops in the tropics can not be too strongly stressed, since it is felt that the many cases of kidney colic due to crystalluria, with or without formation, can be prevented in this way.

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#### A.M.A. Broadcasts Resumed December 15.

A dramatized radio health program, "Doctors at Home," will be resumed over the national network of NBC and associated stations on December 15, according to the November 17 issue of *The Journal of the American Medical Association*. *The Journal* said:

"Beginning Saturday, December 15, at 4 P. M. Eastern Standard Time (3 P. M. Central Standard Time, 2 P. M. Mountain Standard Time, 1 P. M. Pacific Standard Time) the American Medical Association will resume its nationwide dramatized radio health programs on the network of the National Broadcasting Company and associated stations. The broadcasts will run for twenty-six weeks.

"The title for the network broadcasts will be 'Doctors at Home,' which will represent the sixth consecutive year of broadcasting under the general title 'Doctors at Work,' which was modified during the war years to 'Doctors at War' and 'Doctors Look Ahead.' 'Doctors at Home' will deal, as its title

indicates, with the return of doctors from the war and their reabsorption and readjustment into life at home. Going back to the 'Doctors at Work' formula, the programs will be in story form, continuous from week to week. The fictitious doctor who was the hero of 'Doctors at Work' (Dr. Tom Riggs, who was several times mistaken for a real doctor instead of a radio character) will return from his military service and will resume his practice in a typical American town. Listeners will meet again Dr. Riggs's wife Alice and child, the rest of the Riggs family and their friends.

"The fictitious story of Dr. Riggs will be used as a vehicle for dealing with modern medical advances such as new developments in drugs, advances in surgery, anesthesia, obstetrics and other branches of medicine. There will be a constructive attack on the problem of scarcity of physicians. How to choose a doctor, what to do until the doctor comes and other practical phases in health education will be part of the program."

## SOME OBSERVATIONS ON PENDING MEDICAL LEGISLATION AND MEDICAL TRENDS\*

WALTER A. PORTER, M.D.,  
Hillsville, Virginia.

Undoubtly, the Wagner-Murray-Dingell Bill (H. R. 3293) and the Pepper Bill (S. 1318) are the most important of the pending medical legislation.

The Wagner-Murray-Dingell Bill, 1945 Model, introduced in both Houses May 24, 1945, contains nine sections:

*Section 1.* Entitles the Act "Social Security Amendments of 1945".

*Section 2.* Amends the Public Health Service Act of July 1, 1944 (58 Stat. 682) by adding a new title: TITLE VI—GRANTS AND LOANS FOR HOSPITAL AND HEALTH CENTER CONSTRUCTION. This section authorizes appropriation of \$5,000,000 for Grants to States for surveys of hospital needs and plans for meeting them, each State to appropriate an amount equal to its grant.

A single State Agency must be set up to make the survey, subject to approval of the Surgeon General, making "such reports, in such form and containing such information, as the Surgeon General may from time to time require, and comply with such provisions as he may from time to time find necessary" (Sec. 602 (A) (5), p. 3).

"In determining whether to approve a project" the Surgeon General is enjoined to "utilize, \* \* \* the services and advice of the Federal Works Agency in reviewing the title, working drawings, and specifications of any project, supervising the awarding of contracts and inspecting the performance of the work" (page 18, lines 7 to 14).

Authorizes total appropriation of \$950,000,000 during 10-year period for "grants and loans" to be made to states, counties, local governments, and to private "non-profit organizations", all to be subject to approval of Surgeon General and Federal Security Administrator.

Other grants to States, for "administration" of construction plans, \$5,000,000 for year 1946 and "sufficient sum" annually for the next 9 years.

Grants from this fund are not to exceed 50 per cent of cost of hospital project but grantee may receive "supplementary loan" of 25 per cent of cost making total Federal aid 75 per cent of cost.

Provides for establishing "National Advisory Hospital Construction Council" consisting of 8 members, to be "appointed \* \* \* by the Surgeon General, after consultation with the National Medical Policy Council" (provided for in another section) "with the approval of the Federal Security Administrator" "from leading medical or other authorities".

Allotments will depend on the "financial resources" of the several states measured on a per capita income. Those states whose per capita income is equal to or above the average for the nation will receive 25 per cent of construction and administration cost. Those states whose per capita income is less than the national average "the proportion of the cost not covered by the (Federal) allotments" will be that proportion of 75 per cent which "the per capita income of the State bears to the per capita income of the Continental United States" subject to a maximum of 50 per cent of cost or administration. Thus the states with low per capita income will apparently receive twice as much as those equal to or above the national average per capita income (page 29).

Provides that hospital facilities must be "made available \* \* \* without discrimination on account of race, creed, or color", but evades the race problem by providing, "that wherever separate health facilities are required by law for separate population groups, equitable provisions upon the basis of need will be made for facilities and services of like quality for each group" (page 13).

Requires payment of prevailing wages "as determined or adopted \* \* \* by the Secretary of Labor" on all hospital construction.

*Section 3.* Makes routine changes in lettering and numbering of Act of July 1, 1944, in accordance with the above.

*Section 4.* Amends the Act of July 1, 1944, to provide for grants to State and local governments for work on venereal diseases and tuberculosis, by the Surgeon General, on basis of population, need and financial resources, the States contributing amounts "determined in accordance with regulations" by the Surgeon General. Also, authorizes grants for extension of general health services to every political

\*Read before the Southwestern Virginia Medical Society, at Radford, Va., October 4, 1945.



subdivision of the State, if needed, by June 30, 1950.

Provides an annual appropriation of \$5,000,000 to allow the Surgeon General to provide demonstrations and to train personnel for state and local health work. These grants to be made on a scale such that for each state the percentage of total expenditures *not* covered by Federal payments shall be that proportion of 50 per cent which the States per capita income is of the national average, with the limitation that the Federal Government's share shall not be less than 25 per cent nor more than 75 per cent.

*Section 5.* Authorizes "a sum sufficient" for general maternal and child health work and for crippled children, State plans being subject to approval by the chief of the Children's Bureau; but State agency must make reports to Secretary of Labor as prescribed by him and must comply with such provisions as he may prescribe.

Authorizes \$5,000,000 annually for general child welfare services.

Allotment of funds to States to be on same basis as above.

*Section 6.* Provides a sufficient sum for grants for general assistance to the needy, with limitations, State plans to be subject to approval of Social Security Board.

Allotments to States whose per capita income is equal to or above the national average will be 50 per cent of total expenditures; to States below the national average that portion of 50 per cent which their per capita income is of the national average.

*Section 7.* Provides for a nation-wide Employment Service in the Social Security Board with the present U. S. Employment Service and related activities of war manpower commission transferred to new service 6 months after the war.

*Section 8.* Repeals in accordance with the above provisions the Act of June 6, 1933, providing for a national employment system in cooperation with the States.

*Section 9.* Provides for system of social insurance by revision of Title II of the present Social Security Act. Coverage and tax applies to 8 per cent of wages up to \$3,600 annually, earned by all persons except government employees, ministers, casual labor, and a few other minor exceptions, 4 per cent to be paid by the employer and 4 per cent by the employee. For state and local government  $2\frac{1}{2}$  per

cent and employees  $2\frac{1}{2}$  per cent if they come into system and for self-employed 5 per cent of market value of their services up to \$3,600.

Under the benefits the old age Pensions provisions are liberalized. The health insurance section sets up a comprehensive system of health and disability insurance, to be administered by the Surgeon General "under the direction of the Federal Security Administrator" (p. 72).

Authorizes the Surgeon General to appoint a National Advisory Medical Policy Council (p. 77). Authorizes this Council to establish regional, local, and other technical and advisory committees.

The benefits include the services of general physicians, dentists, surgeons, specialists, hospital services, and nursing—including home nursing.

Payments to physicians and practitioners may be made on a fee, per capita, or salary basis or any combination or modification of these approved by the Surgeon General. These payments are to be "adequate" and are to be "commensurate with skill, experience and responsibility".

The Surgeon General is to prepare lists of physicians, surgeons, dentists, and nurses who are eligible for panel practice and lists of "participating hospitals". The patient, however, is to be allowed to choose his own physician or other practitioner from the eligible list.

The maximum number of days of hospitalization in any year is limited to sixty, but the Surgeon General may increase this to one hundred and twenty.

For the purpose of financing this health insurance system a 3 per cent tax on wages (out of the overall Social Security Tax of 8 per cent) is to be allocated to a separate account known as the "Personal Health Services Account", within the Social Security Trust Fund.

The act also authorizes grants for medical education and "dissemination of knowledge" (pp. 98-100). These grants may be made, subject to approval of the Surgeon General, to any "non-profit institution and agencies engaging in research or in undergraduate professional education". The amount made available annually for this purpose is to be 1 per cent of the total amount expended for benefits from the Social Security Trust Fund, exclusive of unemployment insurance benefits.

Benefits.—Unemployment and Temporary Disability Benefits set up a completely Federalized sys-

tem of unemployment and temporary disability insurance. The basic unemployment and disability benefit varies, according to wages and number of dependents, from \$5.00 to \$30.00 per week.

The amount of benefit for any one individual, in any one year, is limited to 26 weeks, which the Board of Trustees of the Trust Fund may increase to 52 weeks. Maternity benefits are also provided.

The establishment of such a Federal system will, of course, mean the end of all the present State Unemployment insurance system. The Bill frankly recognizes—in fact, requires—this:

“In return for the assumption by the Federal Government of the obligation to pay unemployment benefits, a State shall be required, as a condition for the receipt of any grant or payment \* \* \* to transfer to the National Social Insurance Trust Fund the unexpended balances in its unemployment fund or its account in the Unemployment Trust Fund” (pp. 143-144).

This entire Social Insurance Trust Fund is to be invested in Federal obligations, or obligations guaranteed as to both principal and interest by the Federal Government. If there should not be sufficient Federal obligations extant, the Federal Government is authorized to issue “special” obligations for the purpose of selling them to the Social Insurance Trust Fund.

There are many other provisions of less importance in this Bill. If passed, it will represent the most comprehensive system of Government Insurance ever enacted, short of socialism itself. It has obviously been influenced by the Beveridge proposals in England but is more costly and more extensive in its scope.

All the legislative finesse has been followed in drafting the Bill. A variety of subjects are found in one comprehensive Bill making it difficult to amend and almost impossible to oppose specific parts of the Bill without seeming to oppose the whole thing, including its purposes and objectives.

The adoption of this Bill will be a long step toward reducing the State Governments to the position of Federal administrative agencies. Extensive Federal Control is provided in the Bill over all the activities included. The hospital program alone is subject to the control of more than six Federal agencies with arbitrary determinations by the Surgeon General, and other Federal officials will deter-

mine the exact amounts that must be devoted to various purposes, how such expenditure will be allocated, and how the activities are to be supervised after the money is spent.

Liberal Grants to “non-profit organizations” place no limit on affiliation or purposes of these groups except that they be ostensibly engaged in some field of activity covered by the Bill. Religious and social groups, fraternal orders, labor unions can apparently go into the provision of hospital, medical, and related services for their members, thus obtaining support of large bodies of voters.

The Bill is a good example of superfluous propaganda containing a language most acceptable to the masses but avoiding as much as possible controversial subjects. Many objectives in the Bill are laudable. They are in the minority but are to be used as favorable propaganda.

The Bill assures “Freedom from political influence” (page 69) which is obviously an impossibility in an act which creates the actual machinery for political control over wide areas of economic activity.

On pages 80 to 85 it is provided that the patient shall have the privilege of selecting his own practitioner with methods of administration that will promote the physician-patient relationship and adequate payment “according to the skill, experience and responsibility”. All these provisions will be a practical impossibility in view of the detailed regulations and restrictions imposed in the Bill, operating to weaken physician-patient relationship at a pay that could be made inadequate.

The Bill provides for redistribution of wealth, the richer states helping the less fortunate ones. The awarding of contracts could be utilized harmfully.

Analysis of Senate Bill 1318 introduced by Senator Claude Pepper (D-Fla.) and others (6 Democrats, 2 Republicans, 1 Progressive) cited as the “Maternal and Child Welfare Act of 1945” would provide free dental, medical, surgical, and nursing care for every child under 21 years, and every U. S. mother, thus benefiting more than  $\frac{1}{3}$  of our population. The physician would be paid a predetermined fee (fixed by the chief of Program), regardless of basis by which payment is determined. The undefined physician might well be expanded to admit cultists and midwives as well as M. D.-s. The program would be administered and in control of one person



answerable to Secretary of Labor (and, presumably, Congress). This person could cut off grant from any state at will, force the adoption of Children's Bureau Standards of medical care and administration. The Bill provides for an initial appropriation of 100 million dollars (50 million dollars for maternal and child health, 25 million for crippled children, 20 million for child welfare, 5 million for administration) going to the states for the first year, to be matched dollar for dollar in the beginning, and distributed on a percentage basis to the various categories and on the basis of: (1) Number of mothers and children under 21; (2) special problems; (3) financial need of state, etc. Annual appropriations will be made thereafter as needed, with deficits made up in future appropriations. Funds are to come from general revenues. A wolf in sheep's clothing, Folks! Witness the original E M I C appropriation of \$1,200,000, increasing in four years to \$42,800,000—an increase of more than 35 fold for the four lowest grades of service men alone. (Six hundred and forty-five thousand wives and babies were cared for in first twenty-one months). The Bill appears to be designed with all the cunning and subterfuge possible, avoiding controversial questions, such as: Are fee schedules to be adopted? Will hospitalization be standardized for all participants? Would Doctor (service benefit) or patient be paid (indemnity)? This would mean the death of voluntary health insurance plans.

This legislation will probably not appear until late in the present session of Congress. The consensus of opinion is that it will not pass. **But socialized medicine is coming!** Large fields of medicine are already socialized—prevention, public health, and child hygiene, etc. Federal aid to demobilized veterans with the possibilities of expansion to include their families stimulates government control over a large class of individuals. This will be one of the salients whereby the Federal Government will make definite inroads into organized medicine in the next few years. Once the government gets the proverbial inch, it is most sure to take a mile which will be the death knell of private medicine, henceforth to be run by politicians. The effect of unions on government is bound to have its effect on medicine—toward socialization—a positive force. The government is feeling its paternalistic activity in advocating a hospital expansion program. It is

true that hospitals are crowded today, with long waiting lists, by patients who are in better financial condition, but when incomes drop there will not be enough patients who can take advantage of hospitalization to support the contemplated expansion under the present set up.

It is difficult to summarize in a short time what is being done by voluntary prepayment plans throughout the country.

Health and accident underwriters are beginning an aggressive campaign against Federal encroachment by the adoption of uniform medical contracts for nation-wide use in insuring groups and individuals, offering standard contracts in conjunction with state and local societies, including in their contracts benefits equal or superior to those contemplated by Federal plans but at a lower-than-Federal cost to individuals and available to both employer and employee in group coverage. Thus they are working with medicine, business and labor with a full educational program.

Numerous medical societies throughout the country are backing voluntary prepayment plans. The movement is growing and is the greatest opposing force to socialized medicine.

One weakness of the voluntary health insurance plan is that it does not provide for the practice of preventive medicine. Partial coverage is superior to complete coverage in that it eliminates the numerous trips to the doctor for minor ailments, thereby consuming the reserves and causing the organization to fail. It can be sold at a lower price and to a greater number of subscribers which is another safeguard against Federal medicine.

Voluntary health insurance is salable, more so than life insurance, and is a service that has proven itself. But it must be sold to the public. The Blue Cross has sold to some 15,000,000 subscribers by modern salesmanship. A better understanding of the problems by the physician and medical societies would greatly facilitate the success of these plans. Physicians should educate themselves to the necessity of prepaid care and, in general, observe the needs of the country, the various insurance plans, labor programs, and act to meet these needs according to the merits of the situation. This has progressed slowly because the profession generally is not behind the movement as yet and there is no central coordinating agency to facilitate formulating new



plans. A director is needed. Several state societies already have a director engaged in selling the program. The number is small and teamwork is imperative.

One fault of so many plans that have been advanced is that the financial barrier between doctor and patient is being removed, increasing the work and lowering the quality of medical practice.

In 1943, 214 prepayment plans offering various types of medical and surgical coverage covered slightly less than 5 per cent of the non-institutional civilian population.

The National Physicians Committee research found that 22 per cent of all industrial workers in the country in 1943 were employed by concerns sponsoring health insurance programs and 16 per cent were enrolled. Ninety-one per cent of the employees of 1,327 concerns surveyed having health programs were enrolled in the programs provided. Coverage included life insurance, disability benefits, hospitalization, surgery, and to a lesser extent medical care. Four-fifths of the population have never heard of a Federal health plan. Those who have and who have expressed opinions favored the voluntary plan.

In this state there are five or more Blue Cross plans in operation, several "local plans operated by individual hospitals and coal companies", the medical care plans promoted by the Federal Farm Security Administration over the whole state, the plans developed by several private insurance companies, and others. This program is expanding and needs further expansion. No figures are available to me as to the number of persons insured under the various programs. The annual cost varies from \$20.00 to \$72.00 per family of four persons against an average cost of about \$115 per family for all types of medical, dental and nursing care.

It is evident that rural medical care is a sizable problem that is being inadequately met. A need for more community hospitals in rural areas is obvious. The establishment of community hospitals in these areas, well staffed, wholly or partially subsidized by local government, would invite more physicians to a rural practice and bring preventive and curative medicine in reach of all the population of that area. This is one solution to the problem of rural health.

It will need untiring effort on our part to advance some program in addition to that already in operation whereby all, regardless of income, would be assured of minimum medical and surgical care. By education of the masses of people as to what constitutes good medical care, a definite part of the accomplishment of any plan will be completed.

A committee created from the Legislative Advisory Council in this state is now engaged in making further study of the rural health and medical facilities of Virginia in preparation of a report to be presented to the next legislature.

Finally, the challenge is here. Will you accept it? Or will it be, in the words of Shakespeare, "The true beginning of our end"?

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This paper represents a summary of some of the thought current today, very little of which is my own.

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## NON-MALIGNANT, SEGMENTAL, ULCERATIVE LESIONS OF THE BOWEL\*

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In any consideration of ulcerative lesions of the bowel, one must consider systemic disorders which may manifest themselves as local areas of mucosal destruction in the lower gastro-intestinal tract. Many disorders are characterized by single or multiple lesions in the bowel and may be considered truly local unless other evidences of systemic disease are earnestly sought for. Lupus erythematosus disseminatus, periarteritis nodosum, tuberculosis, actinomycosis, uremia, tumors of the cerebrum and mid-brain, and extensive body burns, all may produce non-specific destructive lesions within the gastro-intestinal tract.

Klemperer, Penner and Blenheim have reported changes in the colon simulating chronic ulcerative colitis occurring with shock and have produced these lesions experimentally. Rankin, Borgen and Buie listed twelve cases of ulcerative colitis, all of whom died, which developed post-operatively, following surgical procedures other than colonic operations, and were unable to explain the cause of the colonic pathology. It now seems probable, in view of this recent work, that shock, which was present in most of these patients, may have been the responsible factor.

## DUODENAL FISTULIZATION

The duodenum is remarkably free from ulcerative lesions, other than peptic ulcers. When these lesions do occur and they destroy the mucosa and submucosa of the duodenum, they are most often found distal to the ampulla of Vater and are commonly caused by some malignant process, originating most often in the adjacent structures. When malignancy does occur in the duodenum, which is extremely rare, it is at the junction of this organ with the jejunum. Inflammatory lesions of the duodenum are rare and no proven case of actual luetic disease of the duodenum has been reported. Primary tuberculosis of the duodenum is also most uncommon, but secondary tubercular glands or localized peritonitis due to tuberculosis, may affect the duodenum and at times fistulous tracts from the duodenum may occur. In-

ternal fistulization is more commonly due to rupture of a gall-stone into the duodenum from the ampulla of the gall-bladder, rather than to one of the chronic granulomatous diseases or malignancy.

*Case 1.*—A 32-year-old colored private, 8 years previously, had had a diagnosis of and received treatment for, duodenal ulcer. One year later, following a penile sore, which was associated with bilateral necrotic inguinal glands, he received antiluetic treatment for one year. He had gonorrhea one year before admittance. In April, 1943, he was hospitalized for atypical pneumonitis but after the disappearance of the pulmonary pathology, fever continued up to 101° daily for three months, at which time he was admitted to the hospital.

His chief complaint was cramping abdominal pains occurring mostly after meals, which were relieved partially by defecation. He had had two to three episodes of mild diarrhea in the past few months, with two to five semi-soft, non-fatty stools daily. He had lost 30 pounds in four months.

Examination disclosed poor nutrition, mild generalized adenopathy, and a distended, taut, but non-tender and non-rigid abdomen, with no fluid and with normal peristalsis and no masses. Laboratory findings showed a positive Frei test, positive tuberculin test in weak dilution, mild leukopenia, with normal granulocyte percentage and a low-grade macrocytic anemia. Stools and urine were negative for any pathogens. There was normal serum protein but definite hyperglobulinemia. X-rays showed most unusual findings. When observing barium entering the small bowel while performing a barium enema, the opaque solution was seen to quickly enter the upper portion of the abdomen and films later demonstrated that the barium entered a sinus-like tract in the right upper quadrant from which there was a pouch-like projection in the general region of the duodenum. Later this barium was seen to enter the jejunum. Study of the upper gastro-intestinal tract showed a markedly deformed duodenal cap, with a small amount of opaque material immediately above the cap, apparently lying in a sinus tract.

Lymph node biopsy of an abdominal node showed histological appearance of tuberculous lymphadenitis. Celiotomy disclosed severe generalized hyperplastic tuberculous peritonitis and it was impossible to separate surgically the peritoneum from any of the indwelling organs, and therefore the region of the sinus tract could not be explored. Section of the peritoneum showed characteristic histological findings suggesting hyperplastic tuberculous peritonitis.

Frosch and Horowitz recently reported a patient

\*Read before the Richmond Academy of Medicine, October 10, 1944.

who developed a sinus tract caused by tuberculous mesenteric adenitis, with rupture of the abdominal aorta into the duodenum. General autopsy statistics reveal tuberculous mesenteric adenitis in 1 to 3 per cent, while in patients with tuberculosis the condition was discovered in only 0.79 per cent.

#### CHRONIC REGIONAL ENTERITIS

Chronic segmental ulceration of the small bowel is more commonly caused by the condition now known as "idiopathic regional ileitis". It most often is found in the terminal ileum but may involve practically the entire small intestine, but usually there are skip areas of bowel completely free from disease. All layers of the intestinal wall are involved, the chief site of the pathology being in the submucosa, where there is marked hyperplasia and obstructive lymphedema. Later, as a result of the hypertrophy of all layers of the bowel, stenosis may occur with resulting obstruction or fistulization from the diseased gut into the adjacent structures, particularly following surgery to the abdomen. The diagnosis is most often made by roentgen ray, using the motor meal technique, and the most commonly described finding is the so-called "string sign", which is indicative of marked narrowing of the lumen of the ileum, with loss of peristalsis and fixation and disturbance of mucosal pattern. However, this almost pathognomonic finding is not necessary for the diagnosis and, in some cases, only evidence of alteration of the pattern of the mucosal membrane may be found. The following two cases will illustrate this point:

*Case 1.*—A 24-year-old corporal, while stationed in the British Isles in January, 1942, experienced episodes of nausea and vomiting, followed by mild diarrhea, with loss of weight of 63 pounds in two years before admittance.

The significant findings were: A profound depression, with pronounced anorexia, emaciation, glossitis and other anemia. An increased fat content of the stool (22 per cent of dry weight), with constantly guaiac negative stools, were the significant laboratory findings. Roentgen small bowel survey disclosed widespread involvement of the mesenteric small intestine, with a most unusual type of idiopathic polypoid inflammatory enteritis.

Under therapy designed to improve nutrition, he gained 25 pounds in weight and the character of the mucosal lesions in the small bowel was materially altered. His bowel habits became normal and his mental apathy disappeared. Recent follow-up report indicates that he remains symptomatically comfortable.

*Case 2.*—A 22-year-old private entered the hospital

January 15, 1943. Abdominal cramping for 10 months. Three weeks later there was vomiting and two months later, after appendectomy, beginning of diarrhea. Loss of 50 pounds in six months.

Significant findings: Malnutrition, Grade III, oral sepsis, and macrocytic anemia, with response from nutritional management and liver. Hypoproteinemia (2.67), increased fecal fat (dried weight up to 29.5 per cent). Gastric analysis, oral glucose tolerance, tuberculin test and chest were negative. No change in calcium-phosphorus levels. X-ray showed hypermotility with distortion of small bowel pattern, with puddling and segmentation. No string sign. Colon negative. No osteoporosis. Celiotomy revealed inflammatory lesion of the ileum beginning about 30 cm. from the ileocecal valve and extending orad a distance of about 25 cm. The wall of the ileum was thickened, indurated and reddened, and mesenteric attachment was three times ordinary thickness, with marked lymphadenopathy of the adjacent nodes. The remainder of the entire gastro-intestinal tract appeared normal. Biopsy showed non-specific lymphadenitis. Diagnosis was idiopathic regional ileitis.

#### DIVERTICULI OF SMALL BOWEL

Meckel's diverticulum is a common anomaly found both at autopsy and at operation, and may be the site of ulcerations due to the presence of ectopic gastric or duodenal mucosa or to pancreatic rests within the diverticulum. Bleeding may occur from these ulcerations but is practically unknown after the age of 20. The pre-operative diagnosis of Meckel's diverticulum is most improbable. Other congenital or acquired diverticula may ulcerate but these are most rare and difficult to prove and, when found, they are most commonly seen in the jejunum and, much more rarely, in the ileum.

*Case 1.*—A white private, age 28, had chronic cough following pneumonia, for 12 years. In 1941, had an insidious onset of fever and for one year had run daily temperature between 99 and 100. In February, 1942, diarrhea began and he had several watery stools, occasionally blood streaked, associated with crampy abdominal pains which occurred in cyclic intervals every few days. Lost 30 pounds in weight.

The significant positive findings were: Tenderness in right lower quadrant, daily fever (99 to 101), 3 to 5 soft non-fatty stools daily, hypochlorhydria, hypermotility of the small bowel, and a saccular diverticulum of the terminal ileum, about 2 cm. from the ileocecal valve. After all other therapeutic measures failed, carbarsone was administered empirically with complete cessation of all gastro-intestinal symptoms and disappearance of fever.

It was felt that this patient probably was infested with *endameba histolytica* as all symptoms promptly disappeared after anti-amebicidal therapy, even though no



amebae were found after repeated diligent search. The small ileal diverticulum was probably only an incidental finding.

#### SMALL INTESTINE TUMORS

Tumors of the small intestine often ulcerate and may then cause melena with resulting blood loss anemia, but they are rarely diagnosed before operation unless they are associated with obstruction. In the known presence of a tumor, if the adjacent mucosa is intact and peristalsis is normal, benignity should be favored, while if there is narrowing of the bowel, with rigidity and contraction of the lumen and destruction of the mucosa, malignancy is usually present.

*Case 1.*—A 22-year-old private who, six years ago, suffered with anorexia, fatigue and weakness, with no gastro-intestinal complaint, was found to have anemia and was given blood transfusions, hip shots and iron, with much improvement. During the intervening six years he has had periodic remissions of the above symptoms and significant findings were: Pallor, tachycardia, pronounced microcytic and hypochromic anemia, with bone marrow findings indicating an increased activity of the erythroid elements compatible with a blood loss type of anemia and four plus guaiac positive stools on several occasions.

Esophagoscopy and special esophageal studies showed no varices. X-rays of the small bowel revealed a large, dilated loop of jejunum, with an apparent constriction at the distal end of the loop, with an encased tubular shadow which appeared to represent jejunal mucosa. This was interpreted as indicating a probable intussusception.

Surgical exploration revealed a lobulated polypoid mass arising from the wall of the jejunum, about 30 cm. caudad from the ligament of Trietz. This was excised and proved to be a benign adenomatous polyp, with ulcerations which were unquestionably the cause of the intestinal bleeding.

Adenomatous benign tumors are the most common that are found in the small bowel. Raiford reported 29, and Rankin and Newell 39 instances, of benign adenomas of the small bowel. The pedicle arises from the submucosa, apparently from the connective tissue stroma and histologically the adenoma is made up of intestinal epithelium and the cells are arranged in orderly fashion. They are seldom malignant and are of clinical importance only because they may be the cause of intussusception and hemorrhage.

There have been collected 181 cases of lipoma of the small intestine. At times a mass can be felt but they are seldom seen on x-ray. In these the mucosa usually remains intact but at times erosion may occur, but they are quite avascular and are not invasive.

*Case 2.*—A Philippino, age 24, admitted with right lower quadrant pain and a firm, mildly tender, non-movable mass in the right lower quadrant, with mild fever and leukocytosis. Preliminary diagnosis of appendiceal abscess was made and the patient observed for ten days, at which time fever disappeared but the mass remained and stools were consistently guaiac positive.

Gastro-intestinal x-ray revealed a defect in the terminal ileum and in the ascending colon, the nature of which was not determined. Operation disclosed a large lipoma originating in the terminal ileum, which had invaginated through the ileocecal valve, causing an intussusception of the ileum into the ascending colon.

#### AMEBIC CECITIS

*Amebic Cecitis:* Valerino, Bell and, more recently, Golden, have emphasized the importance of a characteristic deformity of the cecum that occurs with amebiasis. The cecitis resulting from the infestation of this protozoa produces a small, contracted tit-like deformity which will remain as long as the protozoa are present. This deformity usually disappears after amebicidal therapy, but not rapidly.

*Case 1.*—A 26-year-old sergeant developed dysentery in New Caledonia in 1942, for which no causative organism was found. He had recurrent bouts for the next year, with some weight loss and fatigability. Proctoscopic examination showed numerous small punctate but slightly undermined ulcers, which bled easily with friction, with normal mucosa in between. Trophozoites of *endameba histolytica* were found on fecal film. He was treated with carbarsone and chiniofon, with complete relief of all symptoms. X-ray showed a cecal deformity resembling a small, contracted pouch, with no apparent mucosal defect, and four months after therapy the normal contour of the cecum was restored.

#### ACTINOMYCOSIS OF GASTRO-INTESTINAL TRACT

Actinomycosis of the peritoneal cavity is rare, though 20 per cent of all cases, according to Cope, are abdominal. It is the most common visceral mycotic infection in man. It occurs most often in the cecum or the ascending colon, though it has been reported in the rectum, transverse colon and in the stomach. The intestinal infection tends to metastasize to other organs, especially the liver. Fistulization, both internal and external, following surgery, is common.

The most common type of actinomycosis observed in man is the anaerobic type (lumpy jaw in cattle). The aerobic form, known as the *Nocardia*, does not cause visceral actinomycosis. The diagnosis is made by the finding of sulfur granules and the ray fungus from the scrapings of sinus tracts.

*Case 1.*—A 34-year-old white private, approximately four months after operation for a perforated appendix and in whom a draining wound continued, began to experience pain and tenderness in the left lower quadrant. An orange sized elliptical mass was found in this area and a barium enema demonstrated a lesion of the sigmoid proximal to its junction with the descending colon. The roentgen deformity suggested the possibility of extrinsic compression but there was some evidence of possible mucosal damage.

Following negative proctoscopic findings, an idolent abscess was drained just beneath the external oblique aponeurosis in the left lower abdomen, but patient continued to run a febrile course. The incision healed in about one month but the McBurney incision reopened. Under massive penicillin therapy the wound healed and mass in the left lower quadrant completely disappeared. No organism or fungi, or sulfur granules or suspicious colonies were demonstrated.

In view of the clinical story, the roentgen findings and the response to penicillin, it was thought that this represented a probable case of actinomycosis.

*Case 2.*—A 32-year-old colored private, a former worker in a glue factory, known to have had sickle cell anemia, after one year of left lower quadrant pain was found to have a large, non-tender, fixed mass which, on laparotomy, was found to be an adherent, infiltrative tumor, a biopsy of which was reported as being spindle cell sarcoma; however, later biopsy showed it to be a non-specific, chronic inflammatory granulomatous mass. Under penicillin therapy for six weeks, the mass entirely disappeared and patient became symptom free and the incision and sinus tract healed. However, later, a similar but smaller mass occurred in the right lower abdomen. An abscess was evacuated and, from this, several colonies of the ray fungus were found. After another course of parenteral penicillin, all objective and subjective findings disappeared. X-ray deformity consisted of a displacement and a narrowing of the descending colon, without any evidence of mucosal destruction.

#### SUB-ACUTE REGIONAL ULCERATION OF COLON

Non-specific segmental ulcerative lesions of the colon are uncommon. Most often large areas of the colon are involved, beginning usually in the rectum and progressing orad and at times involving the ileum. We have seen sub-acute, segmental ulcerative colitis in various segments of the colon and feel that these cases represent instances of rather localized idiopathic ulcerative colitis which may occur either as an acute fulminating disorder or become chronic and exist over long periods of time.

A private, age 20, with an irrelevant past history, was suddenly awakened on the night of January 11, 1944, with acute, severe, cramp-like abdominal pain, confined mostly to the left lower quadrant. He vomited shortly and the

pain continued to increase in intensity, was periodic, and was somewhat relieved with opiates. Within 12 hours bloody diarrhea began and for four to five days thereafter, eight to ten watery stools, containing fresh blood, were passed daily. His maximal fever was 100.2. There was selective left lower quadrant tenderness, no masses, no muscle splinting. Proctoscopic examination was normal. Leukocytes 20,000, with Polys 82. X-ray showed a marked narrowing of the distal descending and proximal sigmoid portion of the colon, with sawtooth appearance of the mucosa. One month later, in this site, was demonstrated a crater interpreted as an ulcer, and in one month more the narrowing diminished and the lumen of the sigmoid became regular. Four months after onset of the illness, there was only a residual spasm of the sigmoid and all symptoms had disappeared.

#### COLONIC POLYPOSIS

Ten per cent of the cases of chronic ulcerative colitis may undergo polypoid hyperplasia and may simulate multiple adenomatosis. Over half of these cases are limited to the rectum, and distribution through the entire colon is rare. The incidence of carcinoma in multiple polyposis associated with ulcerative colitis is not as high as that recorded in multiple adenomatosis, though in Barger's group they found carcinoma in 25 per cent of polyposis following ulcerative colitis. But most observers are of the opinion that pseudopolyps of ulcerative colitis seldom if ever undergo true malignancy.

*Case 1.*—An Italian private, age 29, in 1940 had severe subacute, fulminating chronic ulcerative colitis. Symptoms continued for six months, with complete disappearance of same until three months before seen by us in March, 1943, at which time he complained of frequent bloody stools, with no tenesmus. His physical examination and laboratory findings were negative but proctoscopic examination revealed multiple adenomatous polypoid masses involving the entire mucosa of the rectum as far as could be seen. The mucosa appeared unbroken and biopsy of the polyps showed chronic inflammatory polyps due, probably, to pre-existing chronic ulcerative colitis.

X-ray of the colon showed the entire large intestine to be the site of innumerable polyps extending from the sigmoid to the cecum, with an apparent stricture at the rectosigmoid.

#### CONCLUSION

In this short treatise an attempt has been made to present briefly certain morbid states, which are non-malignant, and which have caused mucosal destruction within the small and large intestines, and to illustrate each condition with representative case reports.

## HORACE WELLS AND HIS DISCOVERY OF ANESTHESIA\*

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In March, 1940, representatives of the dental profession from all parts of the world met in Baltimore, Maryland, for the centenary celebration of the beginning of formal dental education, dental literature and dental organization.

It is significant that this same profession can celebrate just four years later the centenary year of an event which was of inestimable importance in its effect on the welfare of mankind. One hundred years ago, December 11, 1844, Horace Wells, a dentist of Hartford, Connecticut, first demonstrated and announced to the world that nitrous oxide could be employed to render the human body insensible to the pain of dental and surgical operations.

In a world at war, with its attendant transportation difficulties, it has been inadvisable to hold a large central celebration of this event. The Horace Wells Centenary Committee of the American Dental Association has, therefore, arranged for each state and local dental group in this country to dedicate at least one meeting during this year to Horace Wells and his discovery, and asked each dental school to appoint a Horace Wells Centenary Committee and set aside on December 11, 1944, time for the proper commemoration of this great event. The main celebration will take place in Hartford, Connecticut, today.

It is quite fitting that an institution like the Medical College of Virginia, in which so many branches of the healing art are represented, should have a part in commemorating a discovery of so great importance to all who are interested in the relief of suffering humanity, and it is with no small degree of pride that the dental profession and the School of Dentistry take an active part in this event.

It seems proper on this occasion to give a brief sketch of the life and character of the man whose discovery we are celebrating. It is a long but interesting story. The occasion, however, demands that we be brief.

Horace Wells was born in Hartford, Windsor County, Vermont, on January 21, 1815. He was the

first child of three born to Horace and Betsy Heath Wells. His ancestors were true New England stock and were among the earliest settlers of Vermont. His grandparents were Captain Hezekiah Wells and Sarah Trumbull, of Windsor, Connecticut. Captain Wells served with honor in the American Revolution and was prominent in the affairs of his state. Horace's early life was ideal, for his father owned a large and valuable farm near the Connecticut River. In 1820, however, he sold this farm and moved to Bel lows Falls where he operated the first grist mill and also the first smut mill in this section. Thus, Horace, as a young boy, was brought in contact with new and improved mechanical devices. This early environment had an influence which was to manifest itself throughout his life. His parents were intelligent, and, for that region and time, wealthy. They were thus able to give their children every advantage for moral and mental development. It seems that Horace took full advantage of this opportunity and secured what was considered in those days an excellent education. He attended several of the best schools in northern New England. He taught school for a while, during which time the records show that he seriously considered entering the ministry. This idea seems to have been short-lived, for, in 1834, at the age of nineteen, he went to Boston to study dentistry. Associating himself with some of the leading dentists of this city he obtained the best professional education offered at that time.

He was then a young man somewhat above the average in height, heavy set and fairly handsome. He had high color, curly hair and a pleasant bearing. Although extremely sensitive and shy he seemed to make friends easily. He had an inquiring and inventive mind, always seeking the new. As he went on in his profession he invented and constructed many of his dental machines and instruments.

After finishing his studies in Boston he opened an office there, but, in 1836, he moved to Hartford, Connecticut, where he became established and soon became one of the leading dentists of that city. He

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\*Read at a convocation of faculty and students of the Medical College of Virginia, December 11, 1944.



had several students in his office, including William T. G. Morton, and John M. Riggs.

Being of a sensitive nature he was very much concerned about the pain accompanying necessary surgical operations. He had been seeking some drug that could be used in some way to deaden this pain. Records show that he had discussed this problem with Professor John S. Rogers, Professor of Chemistry at Washington College (now Trinity College) in Hartford. All of his efforts failed until December 10, 1844, when he attended an entertainment given by an itinerant lecturer, Gardner Colton. One feature of this show was the effect of nitrous oxide gas on individuals after they had inhaled a certain amount of this gas. It is reasonable to assume that a number of dentists, physicians and scientists had seen this or similar shows, for such entertainments were popular in those days, without being impressed by the fact that the actors, while under the influence of the gas, often received minor injuries without suffering any pain. The alert Horace Wells, however, noted this and immediately decided that this might be the answer to his problem.

The next day, December 11, 1844, Wells secured a quantity of the gas from Colton, took an unusually large amount of it and, while under the effect of it, had one of his own teeth removed by his friend, Dr. Riggs, without pain to himself. So little being known at that time of the effects of this gas when taken in large doses, this was a bold procedure, but Wells was rewarded for his boldness. He had made a new discovery of great importance to mankind.

In 1845, Wells went to Boston to tell his friend Morton and others of his great discovery. While there he attempted a demonstration before a class of Harvard students and, due to some change in the amount or nature of the gas or for some other reason, this demonstration was not as successful as his experiences in Hartford had been. He did not give up, however, for we find him later giving nitrous oxide to patients for major surgical operations for some of the most eminent surgeons of his time.

Wells' attitude toward his discovery is worthy of mention. He did not claim he had discovered many of the peculiar properties of nitrous oxide gas. These had been known for some time. He did claim that he was the first to demonstrate and proclaim that nitrous oxide gas could be inhaled in sufficient

quantities to permit certain operations to be performed without pain, and, if properly administered, without harm to the patient. From an ethical standpoint his attitude towards his discovery was far in advance of his times. We know that he was commercially minded in some respects, for the records show that he obtained a patent for a coal screen December 31, 1839, and for a shower bath November 4, 1840. He was also a dealer in rare paintings. There is, however, no evidence that he ever made any attempt to obtain a patent for his great discovery or on any apparatus used in connection with the administration of nitrous oxide gas. On the contrary, when friends urged him to patent his discovery, he replied, "No! Let it be as free as the air we breathe."

Wells did not live long enough to fully develop his discovery, for he died just a little over three years later; but he had taken all the initial steps. He had the ability to notice and make the right conclusions. He furnished the spark that lighted the way to many new discoveries and inventions based upon his original genius.

Immediately following the discovery of the anesthetic properties of nitrous oxide it was extensively used by dentists in performing all kinds of operations. Its quick induction and the rapid recovery of the patient made it very popular. For a long time it was probably the most used and the most abused of all the anesthetic agents. History has proven, however, that it is a reasonably safe anesthetic agent, for, given under the most unfavorable conditions, by untrained anesthetists using the crudest of apparatus, fatalities have been remarkably few. Another reason for its popularity was that there was a limited field of choice in anesthetic agents for a number of years after Wells' discovery.

With the discovery of the anesthetic properties of cocain when injected into the tissues, and the development of the technic of nerve blocking anesthesia, nitrous oxide became somewhat less popular. Because of the toxicity of cocain, so far as the safety of the patient was concerned, there was for a long time little choice between a general and a local anesthetic agent. The discovery of novocain or procain, a synthetic drug much less toxic than cocain, and recent improvements in injection technic have further reduced the necessity of using any general anesthetic for dental operations.

Although, in this day of modern anesthesia, there is a wide range of choice in both general and local anesthetic agents, it is the opinion of the writer that nitrous oxide still has a place, although limited.

in the practice of dentistry and that the dental profession may be justly proud to honor the memory of the discoverer of this anesthetic agent.

### World War II Casualties.

Sixty-three per cent of the wounds received in World War II were those of the upper and lower extremities, with the lower extremities the heaviest proportion, according to Major General Norman T. Kirk, Surgeon General of the Army, who spoke recently before the Milwaukee Association of Commerce.

"There were 207,754 men of the United States Army killed in action and 571,490 wounded," General Kirk stated. "Of those wounded, 363,322 returned to duty after hospitalization and 25,145 died. These figures indicate that the rate of those wounded who died was nearly twice as great in World War I." Of the 15,000 amputees of World War II, 14,000 needed artificial limbs, 7,000 of whom still remain in general hospitals. The balance either returned to civilian life or remained on duty as instructors for other amputees. There have been two quadruple amputations and nine triple amputations recorded in World War II. Of the 14,000 needing prostheses, 95 per cent have lost one arm or leg, and 5 per cent have suffered two major amputations.

Outlining the Army's job in medical care and rehabilitation of the wounded, General Kirk also stressed the part of the American public in helping the returned veteran, and concluded, "Too many men in the last war became social derelicts because too little responsibility was assumed by business and industry in placement of the individual in a job commensurate with disabilities. Those men have won the war, now let us help them win the peace."

### Infected Ear, Nose, Throat Treated Successfully with Penicillin.

The application of penicillin locally is helpful in the control of acute and subacute infections of the

nose, sinuses, throat and mouth and is of occasional benefit in certain cases of chronic inflammation of the middle ear, according to Fletcher D. Woodward, M.D., and Thomas Holt, M.D., of Charlottesville, Virginia.

"In order to evaluate the local use of penicillin in infections of the ear, nose and throat," the authors state in the October 27 issue of *The Journal of the American Medical Association*, "a study of a group of patients was begun in February 1945 for the purpose of taking advantage of the seasonal peak in the incidence of upper respiratory infections. The study continued for three months. During this period approximately 500 patients were treated."

Five hundred units of sodium penicillin per cubic centimeter of salt solution was found to provide the simplest and most effective means of application. A water soluble jelly containing penicillin was useful at times for instillation into the nose at bedtime. The authors noted that to be effective penicillin must be of sufficient concentration and in constant contact with the infected tissues for a considerable time.

However, the usefulness of penicillin in the treatment of the common cold is still undetermined. A study was made of a group of 40 patients who had the early phase of the disease; 36 improved within 48 hours under this treatment. But, the authors add, "acute rhinitis [common cold] varies widely in intensity and duration of symptoms, and the psychologic effect of a new drug must also be evaluated in one's conclusions. Hence, until penicillin becomes plentiful enough to treat large groups in army camps and industrial organizations, it cannot be said that topical [local] application in the early phase of acute rhinitis will or will not be of value."

## THE TREATMENT OF CRUSHING INJURIES OF THE EXTREMITIES\*

SOUTHGATE LEIGH, JR., M.D.,  
Norfolk, Virginia.

This is a very large and a very important subject in the mechanical age through which we are now living. We have not given it enough attention, probably because the treatment is apparently so simple—amputation. However, injuries that crush extensive amounts of tissue produce just as much shock as burns and must be treated as carefully.

My remarks today will be somewhat limited, because our series of cases is not complete, especially from the standpoint of hematocrit and blood specific gravity findings. It is only recently that we have obtained simple measures for determining these quickly and easily, to tell us the extent of hemoconcentration and the depth of shock.

Let us consider only those crushing injuries that are severe enough to require amputation, and more especially those involving more than one extremity—both legs or both arms, a leg and an arm, or an extremity associated with cerebral concussion or other shocking injury. This class of injury produces deep profound shock from the very beginning, and frequently leads to irreversible circulatory deficiency and death. These patients are actually tottering on the brink and any small push might send them over. To discuss these, let us take a typical hypothetical case, treated according to the usual standards, and explain the rationale of these newer ideas of shock.

There has been, let us suppose, an accident, and the victim is brought into the emergency room with both legs crushed beyond repair, just below the knees. As in most crushing injuries, there is no bleeding but the patient is in intense pain and shows signs of profound shock—apathy, ashen cyanosis, and clammy skin. The interne gives him an extra large dose of morphine, lowers the head of the table markedly, and applies hot water bottles and blankets. He then starts fluid intravenously, usually glucose but more recently plasma. The patient reacts somewhat and by the time the surgeon arrives seems in satisfactory condition. If any laboratory work has been done, it is only an urinalysis and blood count. The former is concentrated, with a trace of albumen, and the latter shows a marked increase in

hemoglobin, red and white cells. The surgeon feels the patient is in as good condition as possible and orders him to the operating room for a general anesthetic. The "prep" nurses there clean up and manipulate the badly crushed tissues, and take off the tourniquet, if one has been applied. Very shortly thereafter the patient collapses and, in spite of extensive supportive treatment and a hurried amputation, he dies.

Before reviewing this hypothetical case, let us take a quick glance at the literature, where the pathologists, physiologists and surgeons do not agree on the exact causes of shock.

Moon, a pathologist, states that it is an H (or histamine like) factor or toxemia from the traumatized muscle; Blalock discredits a toxemia theory and favors local edema; O'Shaughnessy and Slome conclude that nervous stimuli are the important agents; and Trueta, in discussing war surgery, asserts that it is a disturbance of the nervous centers. They all agree, however, that, once started, the vicious circle of shock produces dilatation of capillaries and venules, increased capillary permeability and edema, reduced blood volume and hemoconcentration, and, finally, tissue anoxia, which leads to more injury to the capillaries and continuation of this cycle of death. It is the anoxia, or lack of oxygen to the tissues, that is the deciding factor to be avoided in treating shock.

In the hypothetical case above, we find that the extra large dose of morphine and the lowering of the head of the table, both depress the respiration and increase the anoxia. For pain we have found it better to give frequent small doses of narcotic intravenously. Deep shock is not so much a decrease of blood to the brain as it is a decrease of oxygen in the blood, so that lowering the head does more harm than good.

The direct application of even moderate heat causes dilatation of skin capillaries and perspiration, thus taking more blood and fluid from an already depressed circulation. The patient should be covered, his wet, perspiration soaked clothes should be removed, but too much heat must not be applied.

\*Read before the Seaboard Medical Association of Virginia and North Carolina at Wilson, N. C., December 5-7, 1944.



Saline and more especially glucose leak out rapidly through permeable capillaries and take much of the plasma protein with them, thus reducing further the plasma content and the circulating blood volume. Plasma (or serum) is the rational measure for counteracting the markedly reduced blood volume and the marked hemoconcentration—decrease of the plasma volume in relation to the total solids. Plasma must be given in sufficient quantities just as in severe burns—a good standard is 100 c.c. of plasma for each point the hematocrit reading exceeds 45. If the hematocrit is very high, concentrated plasma, if available, would be best. Usually, because of the collapse of the superficial circulation, it is very difficult to find a vein. The plasma is so necessary that it is best to cut down on a vein or give it in the bone marrow spaces, preferably the sternum.

Drugs that stimulate the arterial circulation are useless and often harmful during profound shock. Most of them work on the brain, the heart, or the arterioles; all of these organs usually are working well and need no further stimulation. Early in shock the sympathetic nervous system pours out large quantities of adrenalin to constrict the arterioles and actually keeps the blood pressure up, even when the blood volume is dropping. Further stimulation by drugs is harmful. However, the administration of oxygen is helpful to some degree to combat the anoxia. This will help the pulmonary oxygen content much more than the actual tissue oxygen. Adrenal cortex theoretically decreases the capillary permeability and therefore is very beneficial. However, the difficulty has been in finding a cortical extract that is free of adrenalin, or a synthetic that is fully effective.

The patient should not be subjected to the further shock of operation until the plasma volume has increased, as evidenced by the hematocrit or specific gravity reading. The blood pressure and pulse rate are not accurate indices of the blood volume at this stage. A general anesthetic should never be given unless it is absolutely certain that the patient is definitely out of shock, because all general anesthetics produce some anoxia.

A tourniquet once applied above the edges of a shattered and crushed extremity should not be removed. Amputation must be done proximal to the tourniquet with as little manipulation of the wound areas as possible. We have seen fatal results so many times from removing the tourniquet or even

from movement of the traumatized area. The tourniquet is applied not to stop hemorrhage, because crushing wounds seldom bleed, but to prevent absorption into the system of the possible disturbing metabolites from the crushed tissues.

Not until Allen in 1941 gave us refrigeration anesthesia did we find a substitute that would relieve the pain with little narcotic and eliminate the shocking use of a general anesthetic. We have found that ice anesthesia used with a tourniquet just above the crushed area works even better in traumatized than in gangrenous limbs. Just as soon as possible after the injury, a tight tourniquet should be applied and the stump packed in ice for several inches above the tourniquet, using the ice trough with a mixture of very fine and medium sized pieces of ice. Usually within 20 minutes after the limb is packed in ice, the pain disappears and the patient begins to rally from his shock. Because of the previous trauma we have found that local anesthesia enough for amputation is produced in two hours time. Usually the amputation can be done without anesthetic except novocain injected into the sciatic nerve. The quickest form of amputation is best. We usually do a guillotine and apply traction to the stump later. The after treatment is simple except the stumps must be allowed to thaw slowly, keeping ice caps on for a few days. We have noticed that the wounds usually heal slower than other amputations, but they do heal satisfactorily.

Here follows a typical case history: At 4:00 A.M., May 20, 1944, W. J., 43, a colored water tender for the N.&W.R.R., fell under a locomotive which ran over his left foot and lower right thigh, completely crushing them off. A first aid man applied a tourniquet just above the injury of the thigh and hurried the patient to the hospital. He arrived in intense pain and profound shock—apathy, ashen cyanosis and clammy skin. At 4:45 A.M. he was given 500 c.c. of plasma rapidly and  $\frac{1}{8}$ th of a grain of morphine intravenously. The limbs were not disturbed except to cut away the clothes and apply an elastic tourniquet above the one put on at the time of injury. He was then packed in ice, using the trough, for a space of three inches above the injured areas. Within 20 minutes, all pain was relieved and the patient had recovered sufficiently to ask for a cigarette. One hour later he was given another 500 c.c. of plasma and  $\frac{1}{8}$ th of a grain of morphine intravenously, following which the hematocrit reading

was 36%. Unfortunately, the laboratory did not get one on admission to the hospital. His local anesthesia at this time was complete and he was taken to the operating room where both legs were amputated above the tourniquets, using only a few drops of novocain in the sciatic nerve of the thigh and a few whiffs of anesthetic when the tibia of the second leg was cut through. His pulse, 100 to 110, and blood pressure, 110/60, remained constant throughout the operation, after which he was given 500 c.c. of blood. Four ice caps were kept on each stump for four days, and then traction was applied to the thigh. Skin grafting and readjustments of the stumps were done several weeks later, and he made an uneventful recovery.

#### SUMMARY

1. Crushing injuries of the extremities produce as extensive shock as severe burns.
2. This shock should be treated as carefully as burn shock, using hematocrit or blood specific gravity levels to determine the amount of plasma that is necessary to balance the hemoconcentration.
3. A tourniquet must be kept on the crushed limb to prevent absorption.
4. All other factors that contribute to anoxia or

shock: i.e., excessive morphine, lowering head of table, excess heat and general anesthetics must be eliminated during shock.

5. Refrigeration anesthesia is the choice for operation under these circumstances, and, we believe, will save many lives.

The author wishes to express his appreciation for the kind cooperation and interest of Dr. Arnold Strauss, Pathologist, De Paul and Leigh Memorial Hospitals, Norfolk, Va.

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712 Botetourt Street.

#### The Gorgas Medal.

Sponsored by Wyeth, Incorporated, Philadelphia pharmaceutical house, and awarded annually since 1942 by the Association of Military Surgeons of the United States for outstanding work in preventive medicine for our armed forces, was presented on October 29 to Captain Lowell T. Coggeshall, M.C., U.S.N.R., expert on tropical diseases, "for distinguished service to our military forces in establishing new principles in the management of patients suffering from psychic disturbances as well as physical deterioration from the effects of malaria and filariasis".

The medal was given to Captain Coggeshall at a dinner in his honor at the Mayflower Hotel, Washington, attended by members of the Army and Navy medical services and executives of the Wyeth Company. Rear Admiral Harold W. Smith described

Captain Coggeshall's work at the Marine Barracks, Klamath Falls, Oregon, in rehabilitating nearly 10,000 members of the armed forces—Seabees, Marines, Army and Navy Units stationed at American Samoa, French Wallis, British Samoa and other outposts of the South Pacific theatre—afflicted with the dread and painful disease of filariasis, a primary manifestation of elephantiasis transmitted by several types of mosquitoes indigenous to the tropics.

Frank F. Law, vice-president of Wyeth, Incorporated, presented the Medal to Captain Coggeshall for the Association of Military Surgeons. The award carries with it an Honorarium of \$500 in addition to the medal, which was established in memory of Surgeon General William Crawford Gorgas, U. S. Army, who made possible the construction of the Panama Canal and was a pioneer in the control of tropical diseases.

## TRAUMATIC SUB-CAPSULAR HEMATOMA OF THE SPLEEN: CASE REPORT

L. R. O'BRIAN, JR., LIEUTENANT (JG) M.C., U.S.N.R.,  
Lynchburg, Virginia.

The following case history concerns a 19 year old Third Class Motor Machinist Mate, who came to operation for a ruptured spleen. Traumatic injuries to the spleen are not particularly uncommon and usually do not present unusual problems of diagnosis and treatment. This case does appear to be of special interest, however, because of the difficulties involved in diagnosis in view of a very obscure etiology and because it also portrays the more or less classical course of a splenic sub-capsular hematoma. The conclusions drawn from our study of this case are in no way suggested as original, but are merely listed for emphasis.

F.E.E., MoMM3c on an L.S.T., was first seen in this U. S. Naval Dispensary at 1430 December 24, 1944, having walked over from his ship, a distance of about a half mile. His chief complaint was pain in the abdomen and some weakness and vertigo.

The following history was obtained from him and from the Pharmacist Mate who accompanied the patient to the Dispensary. The patient was perfectly well until two days ago when during noon chow he was suddenly stricken with severe pain in the upper abdomen associated with a sensation of impending syncope. He arose from the table and started to carry his tray to the scullery during which effort he became so weak that two friends had to help him to bed. There was almost, but not complete, loss of consciousness. The patient vomited or eructated frequently for three hours following onset but was nauseated most of the afternoon. During this period he also complained of pain in both shoulders and stated that even motion of the fingers caused pain in the shoulders.

At the suggestion of a doctor from another ship who was called to see him, the patient was confined to bed and given nothing by mouth for twelve hours. The doctor also advised that if he did not improve or became worse he should be turned in at the Dispensary. Within twelve hours the patient was much improved and did not appear very sick. His only complaint was weakness and vertigo when attempting to stand and moderate but not severe soreness of upper abdomen. The shoulder pain was less an-

noying but appeared to be exaggerated by deep inspiration. During the day, December 23, 1944, he had four loose bowel movements associated with cramping and tenesmus. There was no further nausea or vomiting and no melena or hematemesis.

During the second twenty-four hours following onset, there was more persistent abdominal discomfort and soreness. The weakness and vertigo continued and the patient complained of increasing discomfort in the left shoulder on deep inspiration. In view of persistent abdominal discomfort he was sent into the Dispensary for an examination.

At the time of admission to the Dispensary the patient pleaded to be allowed to return to his ship, stating that he only had an "upset stomach and am not sick enough to be in a hospital".

With careful questioning no history could be obtained of a similar previous attack, or any familial disease, or any chronic infectious disease, special emphasis being placed on a possible previous malarial infection, or of any symptoms suggestive of disease of gastro-intestinal, cardio-vascular, or genito-urinary systems.

The patient was also questioned very carefully concerning any possible abdominal trauma within the previous few days to several months. He finally recalled that 5 days before he had been using an electric drill which had been held against his abdomen to exert pressure and that it had been necessary to hang over some line shafts on his abdomen to reach the bilges. He did not recall having suffered any discomfort during this procedure and emphatically denied even the slightest abdominal soreness prior to the sudden onset of the present attack.

Physical Examination: The appearance was that of a well nourished, well developed young man who appeared a little washed out and slightly pale but otherwise not acutely ill, with no cyanosis or jaundice and apparently not acutely uncomfortable. Temp. 97, P. 90, regular, good volume, and strong. R. 18, even and regular. B.P. 126/72. Examination of head, ears, eyes, nose, and throat revealed nothing abnormal and the heart and lungs were entirely normal. The abdomen appeared slightly dis-



tended and was generally tympanitic. Active peristalsis was heard. There was moderate tenderness over the whole upper abdomen with slight muscle spasm which appeared mostly voluntary and a little more marked over the left upper quadrant. Slight rebound tenderness was present referable to the upper abdomen. No definite masses could be palpated but there was a fairly large area in the left upper quadrant which was dull to percussion and similar examination over the lower left chest suggested an elevation of the left diaphragm. Some free fluid in the abdomen was suspected but could not be definitely proven by percussion wave or shifting dullness. The abdominal tenderness was most marked in the left upper quadrant. Examination of extremities and reflexes revealed nothing abnormal.

Laboratory report: RBC 4,200,000; Hgb 80 per cent (Sahli); WBC 12,500; 64 per cent polymorphonuclear leucocytes.

In the light of the above findings pathology of the spleen was considered, but the absence of history of previous disease or trauma plus the relatively good condition of the patient caused us to be hesitant about immediate surgery. The patient was grouped and matched with suitable donors and admitted for observation.

During the period of observation an x-ray taken of the chest showed a definite elevation of the left leaf of the diaphragm but no evidence of intrathoracic pathology. A flat plate of the abdomen showed an area in the left upper quadrant which appeared abnormally opaque, suggesting increased density, but the lower border of the splenic shadow could be clearly seen.

Sixteen hours after admission the patient still did not appear acutely ill and, in fact, appeared somewhat improved. Temp. 98.2; Pulse 80; Resp. 18; B.P. 128/66. The slight rigidity of the left rectus persisted and slight rebound tenderness was present. The patient continued to complain of pain in left shoulder on deep inspiration. Hgb 80 per cent, RBC 3,900,000; WBC 11,500; polymorphonuclear leucocytes 65 per cent.

Twenty-five hours after admission while returning from the bathroom the patient was suddenly seized with severe pain in the abdomen accompanied by syncope. He very rapidly developed the classical picture of sudden, severe intra-abdominal hemorrhage. His color was very poor, pulse very rapid

(160) and of small volume, B.P. 70/30 and the whole abdomen was rigid and extremely tender to palpation. No time was lost in preparation of the patient and immediate operative measures were taken. Intravenous fluid was withheld until the patient was on the operating table and in surgical anesthesia.

The patient was given morphine sulphate grains  $\frac{1}{4}$  with atropine grains  $\frac{1}{150}$  fifteen minutes before the operation. Open drop ether anesthesia was used because it was felt that the severe shock contra-indicated the use of spinal anesthesia which is most frequently our choice of anesthesia for abdominal operations.

The abdomen was opened through a left oblique subcostal incision. A large amount of fresh blood was found in the abdomen and also a number of old dark clots in the upper quadrant surrounding the spleen. The splenic pedicle was grasped by the operator's fingers to control further hemorrhage while the spleen was examined. It was found to be within normal limits in size and without any adhesions. Almost the whole of the capsule over the superior-lateral convex surface was found stripped away with only ragged free edges of its margin remaining. A small laceration of the cortex  $1\frac{1}{2}$  inches in length was found near the center of the convex surface of the spleen to which several small dark clots were still adhered. The splenic vessels were separately doubly ligated with No. 2 chromic catgut and the spleen removed. All blood clots which could be found were removed but no effort was made to remove all the unclotted free blood. The incision was closed routinely in layers without drainage. Catgut technique was used.

During and immediately following the operation the patient received 1,000 c.c. of 5 per cent glucose and 1,000 c.c. of citrated whole blood, from two donors. At the start of the anesthesia, the B.P. was 60/0 and pulse 160, but when the patient was returned to the ward the B.P. was 130/60 and pulse 140.

Following operation the blood pressure remained normal and the pulse rate gradually returned to normal within 24 hours. The highest post-operative temperature was  $101^{\circ}$  on the second day. The patient never became distended and did not suffer from nausea or vomiting. He was given a third 500 c.c. of citrated blood 24 hours post-operatively.

The post-operative course was entirely satisfactory and uneventful except for persistent urinary retention which necessitated repeated catheterization for five days. In spite of this, however, there was never any evidence of urinary infection.

The sutures were removed on the 7th post-operative day and the patient allowed out of bed on the 10th post-operative day. The subsequent convalescence was entirely satisfactory and blood counts made on the 21st post-operative day showed Hgb. 80 per cent; RBC 4,450,000; WBC 16,700, with 53 per cent polymorphonuclear leucocytes and 47 per cent lymphocytes. It can be seen that the blood picture was essentially normal except for a leucocytosis which is a common finding for a period following splenectomy.

COMMENT: A review of this case reveals several interesting features worthy of mention:

1. An injury to a previously undiseased spleen was sustained by a traumatic incident so slight that even persistent questioning of the patient failed to establish any recollection of abdominal injury.

2. The injury produced was a small laceration of the splenic substance possibly without tear of the capsule with a resulting sub-capsular hematoma. This hematoma finally ruptured more completely through the capsule three days after the original small intraperitoneal hemorrhage. This was suddenly followed by a massive hemorrhage from the

spleen. This incident draws attention to the dangers of non-surgical conservative treatment of a traumatized spleen.

3. Following operation the blood picture was restored to normal within a brief period as a result of adequate blood replacement at the time of and following operation plus the fact that the liquid unclotted blood was allowed to remain within the peritoneal cavity, providing, in effect, an intra-peritoneal auto-transfusion.

4. Ether was considered the anesthetic of choice rather than spinal because of existing shock.

5. No attempt was made to administer intravenous fluids to combat the shock until the surgeon was in position to control further bleeding by operation. It was felt that any elevation of blood pressure might result in fatal hemorrhage before ligation of the splenic pedicle could be effected.

6. No explanation was found for the persistent bladder urinary retention of five days' duration.

7. The slightest injury to the abdomen in region of left upper quadrant should always be evaluated with extreme care in view of the sometimes obscure but extremely dangerous injuries to the spleen. A suspected splenic injury should never be considered lightly, because quite suddenly it may become a problem requiring dramatic major surgical attention.

U. S. Naval Dispensary, Navy 93—Box 4A, Care Fleet P. O., New York, N. Y.

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### Floral Eponym (33)

#### BLUMENBACHIA

BLUMENBACH, JOHANN FRIEDRICH, 1752-1840

Blumenbachia is a small genus of annual South American herbs of the family Loasaceae. They are rarely cultivated, although their flowers are odd and pretty, because they are covered with stinging hairs.

Johann Friedrich Blumenbach of Göttingen was the founder of modern ethnology. His chief work was *De generis humani varietate nativa*, Göttingen, 1776.

## CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE  
MEDICAL SOCIETY OF VIRGINIA

This patient was a nineteen-year-old negro, primipara. The physician was called about 6 A. M. on account of abdominal pain. The examination revealed only moderately severe cramps in the lower abdomen accompanied by slight vaginal bleeding.

There is no record of the history having been recorded although the history obtained from her family by the investigator was most significant.

The first symptom noticed was severe pain in the lower abdomen about six days before. This pain was intermittent and cramp-like and more severe in the right side. There had been a small amount of vaginal bleeding at intervals through the succeeding days. During the four days preceding admission, she had fainted several times. She thought she had had her period about three weeks before this, but this story was not convincing. It probably was only slight bleeding. The correct diagnosis was apparently not made or suspected at the time of the first examination. About two hours after this visit, the doctor was called again. At this time, he found her in moderately severe shock and sent her to the hospital.

On admission, the patient was found to be in shock, the abdomen full and tense and severely tender over the whole abdomen. The pelvic examination was not recorded.

The laboratory reported red cells, 2,950,000, leukocytes 67,800, hemoglobin 43 per cent. The diagnosis now of ruptured ectopic pregnancy was made. 1,000 cc. of 5 per cent glucose and normal saline was given by venoclysis soon after admission and attempts were made to secure a donor.

At 2:30 P. M., three hours after admission, she was operated upon under ether anesthesia. A ruptured tubal pregnancy on the left side was found. A left salpingo-oophorectomy was done. A transfusion was given some time after the operation. She died three hours after the operation, or 5:50 P. M., which was eleven hours fifty minutes after the first visit and eight hours after admission.

The final report of the Committee was a non-preventable obstetrical death. In the light of all of the subsequent information, we cannot avoid the conclusion that she had had incorrect treatment in some particulars. Circumstances beyond control may have accounted for some of this. In the first place, if the party had called her doctor sooner, it would have been better. However, when the doctor saw her first, a consideration of her history and the obvious findings would have justified immediate hospitalization without the pelvic examination in the home, which certainly would have increased her chances of bleeding and the probable rupture.

On admission, she could have been treated for shock by some simple measures such as lowering the head of the bed, oxygen inhalation or morophine without any intravenous medication until the blood for transfusion was ready. The transfusion could have been given simultaneously with the operation. From the story, it would seem that there was sufficient blood in the abdomen to have afforded an appropriate amount for additional transfusion.

If these measures had been followed, it is reasonable to conclude that her chances for recovery would have been better.



## PUBLIC HEALTH

I. C. RIGGIN, M.D.,

*State Health Commissioner of Virginia*

The report of the Bureau of Communicable Diseases of the State Department of Health for October, 1945, as compared with the same month in 1944, and for the period of January through October, 1945, compared with the same period in 1944, follows:

	OCT.	OCT.	JAN.-	JAN.-
	1945	1944	OCT. 1945	OCT. 1944
Typhoid and Paratyphoid Fever	25	11	153	114
Diarrhea and Dysentery	584	554	6,812	5,803
Measles	25	20	1,280	17,051
Scarlet Fever	392	226	3,294	2,339
Diphtheria	122	45	354	236
Poliomyelitis	38	104	321	702
Meningitis	5	16	203	483
Undulant Fever	4	2	30	35
Rocky Mountain Spotted Fever	1	4	93	79
Tularemia	2	2	40	42

## AVAILABLE SERVICES RELATING TO INDUSTRIAL HYGIENE

With the increased interest in industrial medicine, as evidenced by full time medical departments in large industries, and part-time medical services in many others, the family physician is becoming more alert to conditions in his practice that are related directly and indirectly to occupational activities.

Through its physician director, the Bureau of Industrial Hygiene of the State Department of Health offers to industrial and private physicians consultations in diagnosis and treatment of occupational diseases, and in differential diagnosis between occupational and non-occupational illnesses.

Mass chest x-ray clinics among industrial workers and the interpretation of films are services of the State Department of Health which have been widely accepted by industry. Seventeen different pathological conditions of the chest can be diagnosed by these films; including many cases of early and unsuspected tuberculosis, asbestosis, silicosis in all its stages, and certain heart conditions. Two traveling

x-ray units currently are servicing the Virginia workers.

Advice from the Department is available as to allowable concentrations of toxic materials in plant atmosphere; also attainable is the latest information concerning the toxicity of various substances used in industrial processes.

Through its staff of engineers, the State Department of Health is prepared to make plant surveys for the purpose of locating occupational hazards, if any, such as dangerous dusts in factory air, poisonous fumes, vapors and gases arising from metals and chemicals, oils and synthetic materials that irritate the skin, and other hazards. Recommendations thus are made for the application of practical measures to control any hazards discovered.

Through the Department's well equipped chemical laboratory and field instruments, air samples can be collected for a variety of air contaminants in connection with the engineering survey to determine the extent of the particular hazard. Advice is offered to industry and to physicians on methods of analysis for various air contaminants. The laboratory makes analyses of a great variety of materials which may endanger the health of the workers, such as dusts, metal fumes, solvent vapors, etc. Analyses for toxic materials in biological samples, such as urine, blood, and tissue are routinely performed by the laboratory staff.

Nursing services available through the State Department of Health consist of consultant services to the individual industrial nurse, advice in planning health programs, particularly in smaller plants, and in assistance in the improvement of the existing nursing services.

Advice on nutritional problems and group feeding are available upon request. These services include charts for the preparation of an adequate diet and various posters concerning the value of a well balanced diet.

# PROCEEDINGS MEDICAL SOCIETY OF VIRGINIA

October 22-23, 1945

Roanoke, Virginia

Council

The annual meeting of the Council of the Medical Society of Virginia was held at Hotel Roanoke, Roanoke, on Monday, October 22nd, at 10:00 A.M., with the President, Dr. H. B. Mulholland, presiding. Others attending were: Dr. Julian L. Rawls, President-Elect; Dr. H. B. Haag, Vice-President; Drs. F. C. Pratt, C. L. Harrell, W. B. Porter, J. L. Hamner, W. C. Akers, J. R. Gorman, A. F. Robertson, Jr., J. E. Knight, and F. H. Smith, Councilors; Dr. M. P. Rucker, Editor of the MONTHLY; and Dr. I. C. Riggin, State Health Commissioner.

The reading of the minutes of the last Council meeting was dispensed with and they were approved as published in the May 1945 issue of the MONTHLY.

Dr. Porter then presented the budget as prepared by him and Dr. Akers. He also stated that the Committee recommended that \$10,000.00 of the special fund for the Legislative Committee and \$7,000.00 of the Society's checking account be invested in coupon bonds which pay approximately 2½ per cent interest. It was moved and carried that the budget be adopted as follows:

MEDICAL SOCIETY OF VIRGINIA	
Salaries .....	\$3,180.00
Special Appropriation—Executive Office .....	300.00
Rent and Phone .....	375.00
Stationery and Office Supplies .....	75.00
Repairs and Replacements .....	40.00
Postage .....	225.00
Audit Fee .....	37.50
Social Security Tax (½) .....	30.00
Miscellaneous .....	25.00
President's Expense .....	100.00
President-Elect's Expense .....	50.00
Councilors' and Officers' Expense .....	75.00
Delegates to A.M.A. ....	650.00
Convention Expenses .....	600.00
Scientific Exhibits .....	350.00
Department Clinical and Medical Education .....	2,400.00
Walter Reed Commission .....	125.00
Child Welfare .....	10.00
Maternal Health .....	20.00
Cancer Control .....	120.00
Industrial Health .....	20.00
Public Relations and Medical Service .....	300.00
	<hr/>
	\$ 9,107.50

## VIRGINIA MEDICAL MONTHLY

Salaries .....	\$3,180.00
Special Appropriation—Executive Office .....	300.00
Rent and Phone .....	375.00
Preparation of Journal .....	9,000.00
Stationery and Office Supplies .....	35.00

Repairs and Replacements .....	40.00
Office Postage .....	55.00
Audit Fee .....	37.50
Social Security Tax (½) .....	30.00
Miscellaneous .....	20.00
	<hr/>
	\$13,072.50
	<hr/>
	\$22,180.00

In explanation of part of the increase asked by the Department of Clinical and Medical Education, Dr. Staige Blackford, University, who had assisted the Department to formulate plans for helping returning medical veterans, was asked to tell the Council of this work. The following is a tabulation of some of the detail:

## Report on Work of Department of Clinical and Medical Education

To all doctors from the State of Virginia's quota in the armed services, we mailed a questionnaire and (1st) form letter. The replies we have received have been tabulated and the following information has been obtained:

1. Number of questionnaires mailed out.....	1,000
2. Number of questionnaires returned.....(about)	200
3. Number of questionnaires answered.....	270
4. Number of wants (A).....	214
5. Number of don't wants (B).....	56
6. Number on left of line (practice before war).....	161
Average age .....	40
Average work .....	Refresher course
Average time .....	6 months
7. Number on right of line (house staff).....	109
Average age .....	30
Average work .....	Work up to Residency
Average time .....	3-4 years
8. Letters written to Dean, etc.....	16
9. Number wanting financial assistance .....	21

In reply to all questionnaires received, we mailed another (2nd) form letter. A good many veterans have received personal letters from both Dr. Hart and Dr. Blackford answering pertinent questions and supplying desired information.

To gather up information needed for replies to veterans we wrote to:

1. All of the medical specialty boards, asking for the board requirements and asking what credit would be given on board requirements for duty served in armed forces.	
2. All hospitals in the State of Virginia asking the number of vacancies for internes, residents and staff officers. This information is tabulated so veterans, upon coming in the office, can immediately see the opportunities in Virginia. Following is a summary:	
1. Number of hospitals written to .....	100
2. Number heard from .....	48
3. Vacancies .....	122
Internes .....	53
Assistant Residents .....	15
Residents .....	50
Either .....	11
Staff positions .....	28

Addresses have been very difficult to obtain. If the supplied military address proved to be wrong, we wrote to the veteran's medical school for both home and the latest military address. After both of these addresses were exhausted, we still have over 200 questionnaires that have never been delivered. There is no telling how many have been lost overseas.

We have written to the American Medical Association and secured reprints on the "G.I. Bill of Rights", Post-graduate Continuation Courses for Veterans and Civilian Physicians, and several other pamphlets, which have not yet arrived, that will be useful to returning physicians.

We have tried to keep the officers of the Medical Society of Virginia informed of the work that was being done in this office by sending them copies of each form letter as it was printed. Dr. Hart made several trips to Richmond, one to the Surgeon General's Office in Washington and numerous telephone calls to secure the compiled information. He interviewed all veterans who have returned to the University of Virginia seeking information about returning to civilian status—in the line of further educational training and in the line of setting up a practice. He has done much work that can be reported on only in person.

#### FINANCIAL STATEMENT

July 25, 1945—2,500 3¢ stamped envelopes	\$ 83.70 (paid)
July 31, 1945—Miss Overton's salary	100.00 (paid)
August 31, 1945—Miss Overton's salary	100.00 (paid)
August 31, 1945—University Press—printing matter	45.80 (paid)
September 21, 1945—University Press—printing matter	3.50 (paid)
	<hr/> \$333.00
Chart paper—University Press	1.00
Misc. Office supplies—Miss Overton	1.40
Misc. Office supplies—Mrs. McLean	3.40
September 30, 1945—Mrs. McLean's salary	75.00
	<hr/> \$ 80.80

Dr. Blackford also told of the refresher courses to be given at the University of Virginia and the Medical College of Virginia. Each school will give two courses, one every three months, and they will last two weeks. The charge for the course will be \$40.00, and the classes will be limited to fifty, returning veterans being given priority. The two medical schools are being allowed to increase their house staffs to take care of returning physicians and they are arranging to have extern observers who would be allowed to participate in all exercises.

In addition to this, the Department has set up an information and personal service center. They have written to each graduate school in the country and have data available with regard to post-graduate training. They also have a file of available locations in Virginia.

In answering questions, Dr. Blackford stated that the present G.I. Bill of Rights does not allow for payment of post-graduate instruction while a man is on terminal leave but after that time he can receive a certain amount for such education. In the meantime, most of the returning men have three months terminal leave and they are anxious to get started in refresher and educational courses before the end of that time. It being stated that a good many of the civilian doctors would be interested in post-graduate or refresher courses, due to the fact that they had not been able to get away from their practice during the war, Dr. Blackford said again that the refresher courses being given by the two Virginia schools would be

limited to fifty, veterans being given priority, but that anyone could take the courses up to this limitation.

Motion was made and carried that the balance of \$80.80 for the unpaid expenses of the Department to September 30th be paid.

Dr. Mulholland said that Dr. A. D. Hart had done a great deal of work on this project, but as he had had to give it up on account of his health, Dr. Blackford would be appointed a member of the Department to carry on. It was moved, seconded and carried that Dr. Hart be given \$500.00 by the Society as compensation for services rendered the Committee.

The secretary was then asked for a report on the moving of the Ephraim McDowell marker back to the highway or a more conspicuous spot. She stated that the State Highway Department plans to move the marker and set up an appropriate memorial as soon as times are back to normal.

Dr. Rucker presented a letter from the Rhode Island Medical Society stating that a bill is being presented before Congress to increase the 2nd class postage rates and this would apply to the MONTHLY. It was moved and carried that Dr. Rucker write resolutions protesting this raise and they be sent to Virginia representatives in Congress.

Dr. Mulholland then gave a report on a Conference he had just attended in Chicago, held under the auspices of the Council on Medical Service and Public Relations of the American Medical Association. The first morning was taken up with a discussion on legislation, referring especially to the Wagner-Murray-Dingell Bill. The opinion was that this Bill would not pass this session of Congress. Even though it appears to be dead, it has not been buried, and doctors should not relax their efforts to defeat it or substitute something better for it. The Hill-Burton Bill has the general approval of the American Medical Association and doctors in general and it is felt this will pass. Resolutions were passed to be transmitted to the House of Delegates of the AMA stating opposition to the new EMIC program. It was felt that doctors and the AMA should take a very positive stand and try to come out with something constructive to meet the demands of the public. Pre-payment medical plans and a national medical service plan were discussed. Each state was asked to send a representative to a meeting on November 30th and December 1st to discuss the question of a national medical service plan. In a discussion of rural health problems, Dr. Mulholland had stated at the meeting that most of the doctors engaged in a study of this problem were from cities and did not know much about rural health conditions. Each state society was asked to appoint a committee on rural health. A discussion of the AMA's 14 points was held on the last day and it was felt that these should be implemented. A representative of the Veterans Administration stated that they want the veterans to be handled where possible by the doctors of their own selection. He asked that the



medical profession organize through their county or local societies some method of handling veterans. New Jersey has offered to handle them on a county society basis and they are arranging clinics, the fee to be fixed by the county society and paid by the federal government. All resolutions which were presented at the conference are to be passed on to the House of Delegates of the AMA for consideration at its meeting in December.

Dr. Mulholland next told of the Report on Medical Facilities in Rural Areas of the State, prepared by the Committee on Public Relations and Medical Service, and read the resolutions which they will pass on to the Legislative Advisory Council of the General Assembly. Dr. Harrell moved that these be approved and presented to the House of Delegates. Carried.

A letter was presented from Mrs. P. M. Chichester, President of the Woman's Auxiliary to the State Society with regard to the licensure of practical nurses in Virginia and the prevention of pollution of streams in the State. After discussion, it was moved that action with regard to the licensure of nurses be tabled until further information could be obtained. Seconded and carried. It was later moved and carried that this be referred to the Committee to Confer with the State Board of Nurse Examiners for further study with instructions that they submit their recommendations to the Council at its mid-winter meeting.

It was stated that a resolution had been adopted at a previous meeting of the Council with regard to the pollution of streams and it was moved that this be re-affirmed. Dr. Harrell said that this had been discussed for the past ten years and they are not getting anywhere. Dr. Riffin said the General Assembly had a special commission to study this and the State Chamber of Commerce is interested so he thought some definite action would be taken within the next few years. Dr. Harrell moved that Drs. Rucker and Riffin be instructed to draw up a resolution with reference to the matter of stream pollution. Carried.

In closing the meeting, Dr. Mulholland said he had enjoyed his association with the Council and felt that the medical profession has some very serious years ahead of it. Doctors should study their problems and control them and this can be done if they really get to work and think about their solution. He asked the members of the Council to carry back to their districts the feeling that local doctors and societies should take up and discuss questions concerning doctors. He also asked each councilor to have his county societies send to Dr. Blackford a list of locations open to physicians in their sections, telling him what they think about these locations.

There being no further business, the Council adjourned.

#### House of Delegates

Dr. Mulholland, President, called the first meeting of the House of Delegates to order at 2:30 o'clock on October 22nd, in the Hotel Roanoke, Roanoke.

A quorum was present, and the minutes of the last

meeting were approved as published in the December, 1944, issue of the VIRGINIA MEDICAL MONTHLY.

The budget, as approved by the Council, was then presented by Dr. W. B. Porter. This was accepted.

Committee reports, as published in the October MONTHLY, were then considered:

**Delegates to the American Medical Association** (page 432). Accepted.

**Publication and Program** (page 432). Accepted.

**Medical Economics** (page 432). Accepted.

**Department of Clinical and Medical Education** (pages 432-3). Dr. Mulholland stated that the opportunity had come to this Department to take up post-graduate education for returning veterans. Dr. Andrew Hart was placed on the Committee and did a considerable amount of work in organizing a program for these medical officers but he could not keep up the work and asked that he be relieved. Dr. Staige Blackford has been appointed to fill this place and he will be the liaison man between the veterans and the Medical Society of Virginia. He asked that Dr. Blackford be allowed to tell the House of their work. Dr. Blackford then told of what they had done and their plans for the future (previously reported in Council). Dr. Carrington Williams felt that the returning medical officer should not be required to pay anything for the refresher courses to be put on by the University of Virginia and the Medical College of Virginia. He thought this would be a good way for the Society to use some of its reserve. Dr. Blackford said it did not make any difference to them who pays the fee but it does cost a good deal to run these courses. He did not feel the average man objected to the money side of these courses. Dr. Akers said he had all due respect for veterans but also realized that civilian doctors of the State have done a great deal during the war and gave all of their time and ability to carry on. He did not believe the returning medical officer will appreciate the fact that the Medical Society of Virginia will pay the tuition for a refresher course and felt the program as worked out by the Committee is better. Dr. Moncure moved the adoption of the committee report. Seconded and carried.

Dr. Blackford asked if the Society would be willing to set up a loan fund for veterans. Interest could be charged which would make this as good an investment as you would get from bonds. Dr. Blackford was asked to try to get some information as to the amount needed and bring it before the Council at its next meeting. Dr. Dewey Davis said the Richmond Academy of Medicine looked into this matter and found that because of their charter they could not have a loan service. He wondered if the same might apply to the State Society. Dr. Raiford suggested that the President appoint a committee to consider this. Dr. Gorman stated that the Rotary Club has a student loan fund of \$36,000 and they have lost very little money. Dr. Blackford said the G.I. Bill of Rights does not allow for any loans for education.

**Legislation** (page 433). Accepted.

**Membership** (pages 433-4). Dr. Showalter, chairman,

presented the report and moved adoption of the part with reference to honorary membership of Dr. Mulholland. Seconded and carried. Dr. Mulholland thanked the Society for the honor, and asked the members of the House to stand in memory of those who have died during the past year.

**Ethics** (page 434). Accepted.

**Judicial** (pages 434-5). It was decided to vote on the three amendments in sections, and Dr. Hutcheson moved that the first section be adopted. Seconded. Dr. Dewey Davis offered a substitute motion that this section be left as it is. Seconded and carried. The amendments to Article VI, Section 3, and Article VIII, Section 1, as also the change necessitated in the Constitution, were accepted and laid on the table until the following morning for final action.

A recess was then given for the election of a Nominating Committee, and the following were named:

- 1st District—Dr. Russell Buxton.
- 2nd District—Dr. N. F. Rodman.
- 3rd District—Dr. Douglas Chapman.
- 4th District—Dr. J. L. Hamner.
- 5th District—Dr. B. A. Hopkins.
- 6th District—Dr. F. A. Farmer.
- 7th District—Dr. Guy Fisher.
- 8th District—Dr. J. E. Knight.
- 9th District—Dr. F. H. Smith.

A letter was read from Dr. H. W. Miller, sending names of delegates from the Medical Society of the Valley of Virginia to this meeting. The chair ruled that as this Society has not a charter from the State Society and practically all counties included have component societies, it could not have representation, and the Councilor, Dr. Robertson, was asked to explain this to the Society at its next meeting.

Action on Committee reports was then resumed:

**Syphilis Control** (pages 441-2). Dr. Butler, chairman, presented the following supplemental report. Both reports were adopted.

#### Supplementary Report of the Syphilis Control Committee

**1st Recommendation:** That the State Health Department discontinue the distribution of Neoarsphenamine in the routine treatment of syphilis in favor of the arsenoxides (Mapharsen, Clorosen, Phenarsen, etc.). Ample evidence indicates that there are definite advantages in the use of the arsenoxides over Neoarsphenamine because of the greater therapeutic efficiency and less toxicity of the former. The treatment should begin with full doses, bi-weekly, in all early syphilis.

**2nd Recommendation:** That penicillin be made available for free distribution in the treatment of gonorrheal urethritis. Dosage schedule: 55,000 units by intramuscular injection of aqueous solution every hour for four doses with 5th dose of 100,000 units making a total of 320,000 units in four hours. Longer treatment with greater dosage is recommended in complicated cases.

Future developments may require changes in this treatment schedule. At present, the above procedure is considered superior to the administration of penicillin by mouth in treating infectious venereal disease.

**3rd Recommendation:** Regarding rapid treatment of early syphilis (first four years of infection) with peni-

cillin: The committee advises that the State Health Department make penicillin available for free distribution in the treatment of patients with early syphilis who will be hospitalized for a minimum total dosage of 24 million units, given in a period of not less than 8 days. The schedule usually recommended is 40,000 units every three hours for 60 doses. However, there is evidence that the administration of 25,000 units every two hours to the same total is preferable.

A follow-up period of ten weekly injections of Bismuth Salicylate in oil adds to the therapeutic efficiency of the method. The first three injections should be given during the period of hospitalization.

Any short method of treating syphilis should stimulate increased attention to regular physical examination and serological checks at bi-monthly intervals.

**4th Recommendation:** Your committee has agreed upon the utilization of State Health Department forms 1 through 9 in principle. These forms relate to the reporting of infectious venereal disease. It was recommended that instructions regarding the utilization of these forms be formulated by Dr. D. C. Smith for distribution by the State Health Department.

**5th Recommendation:** Your committee approves the treating of selected cases of asymptomatic neurosyphilis in the Rapid Treatment Centers with the object of decreasing the eventual development of catastrophic syphilis. We urge that all physicians make a spinal fluid examination before the discontinuance of treatment.

**6th Recommendation:** That the State Health Department and the State Department of Mental Hygiene and Hospitals, with the cooperation of the United States Public Health Service, investigate methods for the procurement of funds for the treatment of symptomatic neurosyphilis.

According to statistics submitted by the Virginia Department of Mental Hygiene and Hospitals, during the fiscal year 1945, two hundred and twelve cases of symptomatic neurosyphilis were admitted at a cost to their institutions of \$177,981.00. The State of Mississippi recently appropriated \$40,000 for the control of central nervous system syphilis, which was supplemented by federal government by an additional \$100,000. Without question there are at present, thousands of patients with neurosyphilis in the State of Virginia who are receiving inadequate treatment due to the lack of proper facilities.

Present at the meeting: Dr. R. D. Kimbrough, Dr. D. C. Smith, Dr. J. R. Blalock, Dr. J. W. Love, Dr. E. L. White and Dr. Carleton Walters of the United States Public Health Service in charge of the Rapid Treatment Centers at Norfolk and Richmond.

**Public Relations and Medical Service** (pages 435-6). Dr. Mulholland told of the meeting he had just attended in Chicago, given under the auspices of the Council on Medical Service and Public Relations of the American Medical Association (see Council proceedings), and presented recommendations in regard to rural health. It was moved that these reports be endorsed and approved. Seconded and carried.

**Maternal Health** (page 436). Adopted.

**Child Welfare** (page 436). Accepted.

**Walter Reed Commission** (page 436). Adopted.

**State Board of Nurse Examiners** (page 436). Accepted.

**Mental Hygiene** (pages 437-8). Dr. Wilson, chairman, stressed the effects of war on mental hygiene in the State, following which the report was accepted.

**Tuberculosis** (pages 438-40). Drs. C. W. Scott and C. L. Harrell, members of the committee, stated there are



now 169 vacant beds in state sanatoria. However, an increase in wages has been secured for nurses and orderlies, and, whenever the personnel can be secured, these will be opened for patients. The report was then adopted.

**Nutrition** (page 441). Accepted.

**Cancer** (page 442). Dr. Cooper, vice-chairman, presented the following supplemental report:

#### Supplementary Report of the Cancer Committee of the Medical Society of Virginia

The Cancer Committee submits the following supplementary report:

It has reviewed and approved recommendations submitted to the Governor of Virginia by the Advisory Legislative Council, calling for appropriations permitting the establishment of a Bureau of Cancer Control in the State Department of Health.

The recommendations are four in number:

1. An appropriation of \$15,000.00 to the State Health Department for a Division of Cancer Control, charged with administering the activities of a traveling clinic and disbursing appropriations hereafter recommended to be made for extending hospital and outpatient services to persons suffering from cancer;

2. An appropriation of \$16,800.00 a year to the State Health Department for a traveling diagnostic clinic, staffed by a competent physician and necessary technical assistants to provide diagnostic facilities throughout the State—the clinic to train physicians throughout the State in the diagnosis of cancer;

3. An appropriation of \$65,000.00 a year to the State Health Department for use in reimbursing the hospitals connected with the two state-supported medical schools for hospital and out-patient service furnished indigent persons suffering from cancer; and to the extent that the medical school hospitals in the opinion of the Commissioner of Health are unable to meet the demand for treatment this money may be used with the approval of the Commissioner of Health to reimburse certain other hospitals, certified by the Cancer Committee of the Medical Society of Virginia; giving such treatment; in no case any hospital to be paid more than \$6.75 per patient day. Adequate tissue material from patients cared for in hospitals other than the two State institutions to be sent to the pathology department in one of the two State institutions; a report on tissue obtained in the two state institutions also to be sent to the Bureau of Cancer Control.

4. An appropriation of \$5,000.00 a year to the Departments of Pathology in each of the two state medical schools, the Medical College of Virginia and the University of Virginia, to pay part of the salary of a tumor pathologist. The primary duties of the tumor pathologist to be to provide free tissue diagnostic service to patients cared for through the service program of the Bureau of Cancer Control in the Department of Health, this \$5,000.00 to be used as follows:

Salary of Tumor Pathologist	\$3,000.00
Technician	1,500.00
Materials	500.00

The total called for is \$106,800.00 annually.

While the Cancer Committee has no way of knowing whether these recommendations will reach the General Assembly in their present form, or at all, it asks the House of Delegates of the Medical Society of Virginia for approval of the recommendations as they now stand.

GEORGE COOPER, JR.,  
Vice-Chairman.

Both reports were adopted.

**Industrial Health** (pages 442-3). Accepted.

**Advisory to Woman's Auxiliary** (pages 443-4). Accepted. The report from the President of the Auxil-

iary (printed in November issue of MONTHLY, under the Auxiliary Department) was then presented and approved.

**Medical Examiner System** (page 444). Accepted.

**Rehabilitation** (page 444). Accepted.

Under new business, Dr. Mulholland presented a letter from Dr. B. H. Kyle to Dr. Hugh Trout, asking him to see that the Society take some action with regard to the release of medical men in the service. Dr. Trout did not feel it would do any good to pass any resolutions to this effect because General Kirk is doing all possible to speed up the release of these men. Dr. Plunkett stated he felt it would not do any harm to pass a resolution requesting the surgeon general to return those men who are not doing anything to help the service but just sitting around waiting to come home. It was then moved and carried that resolutions be sent to the Senators and Congressmen requesting that medical officers be returned to their practice as soon as possible.

The House then adjourned to meet again the following morning at 9:00 o'clock.

#### October 23, 1945

The second meeting of the House of Delegates was held on October 23rd at 9:00 A.M., with the president, Dr. Mulholland, presiding.

A quorum being present, the first business to be considered was the adoption of amendments to the By-Laws as presented at the first meeting. It was moved and carried that these be adopted.

The Nominating Committee then presented the following report which was unanimously adopted:

President-Elect—Dr. W. L. Powell, Roanoke.

Vice-Presidents—Dr. J. D. Hagood, Clover.

Dr. W. L. Peple, Richmond.

Dr. W. C. Caudill, Pearisburg.

Executive Secretary-Treasurer—Agnes V. Edwards.

Councilors from the odd numbered districts were named as follows:

1st—Dr. R. B. Bowles, Mathews.

3rd—Dr. Carrington Williams, Richmond.

5th—Dr. W. A. Porter, Hillsville.

7th—Dr. Alex. F. Robertson, Jr., Staunton.

9th—Dr. F. H. Smith, Abingdon.

Councilors from the even numbered districts hold over for another year.

Delegate and alternate to the American Medical Association elected for 1946 and 1947 are:

Delegate—Dr. H. B. Mulholland.

Alternate—Dr. Walter B. Martin.

Dr. J. M. Hutcheson and Dr. Carrington Williams hold over as delegate and alternate, respectively, for another year.

An invitation was extended from the Princess Anne County Medical Society and the Cavalier Hotel to hold the 1946 meeting of the Society at Virginia Beach, and this was unanimously accepted.

In accordance with provisions of the act for appointment of examiners to the State Board of Medical Ex-



aminers, members of the House from the 2nd and 3rd Districts were asked to nominate three members from each District, to be recommended to the Governor, from which he might fill the vacancies which will occur on the Board. The term of service for Drs. P. St. L. Moncure and H. U. Stephenson automatically expires June 30th. The following names were submitted:

2nd District—Dr. M. S. Fitchett, Norfolk.

Dr. G. H. Carr, Jr., Portsmouth.

Dr. N. F. Rodman, Norfolk.

3rd District—Dr. M. H. Harris, West Point.

Dr. M. P. Rucker, Richmond.

Dr. Guy W. Horsley, Richmond.

It was stated that Dr. Moncure and Dr. Stephenson have both served long and faithfully on this Board and the secretary was instructed to draw up a resolution expressing gratitude and thanks for the service they have rendered to the Society and to the State.

Dr. Moncure thanked the Society and said there has been a great deal of pleasure in this work and they have had a lot of work and worry. It has been a very disagreeable job and a very pleasant one in the twenty-nine years he has served. He felt it was up to the members of the Society to study the law and do what they can to help the State Board of Medical Examiners. They have a lot of work ahead of them in trying to keep the cults from getting in. The members should bring pressure to bear on the Governor to appoint the right men as he has the privilege of appointing whom he wants and does not have to take the suggestions of the Society.

Dr. Rodman moved that the House extend to the Roanoke Academy of Medicine and the Hotel Roanoke a rising vote of thanks for their hospitality and arrangements for this meeting. Unanimously carried.

Dr. J. T. Hundley felt that Dr. Blackford's suggestion of a loan to returning veterans to assist them in getting back to their work should be definitely considered at this time. He did not know of a better way in which the Society could use its money than this and moved that this body go on record as approving the idea of extending loans to returning veterans for post-graduate education and that the Council investigate this with the authority to act. This could ultimately grow into a revolving fund. The Council would have to study the legality, etc., of such loans. Dr. Carrington Williams felt that bonds were not as good an investment as young doctors. Dr. Mulholland said that doctors borrowing this money should be required to take out insurance to care for the amount of the loan in case of death. Dr. Harrell did not think this should be limited entirely to members as there are many young doctors who would need help who had not joined the Society. The motion was then carried.

Dr. Gorman stated that he felt the future of medicine, etc., warrants a more active public relations officer and the Society needs a person employed especially for this matter. The Society is failing to follow through on a lot of things they should be doing due to the lack of represen-

tation to direct these problems. The EMIC bill is to come up in committee within the next few weeks and the majority of the committee approve it. This should be followed through and support given to representatives in Congress. Dr. Mulholland stated that the AMA has a representative in Washington. It has been suggested that each Society appoint a legal committee composed of the president, secretary, and three other members who would keep in touch with legislation and do just what Dr. Gorman has suggested. He wondered if the Legislative Committee, already appointed, could not widen its scope from State to National Legislation. Public relations is an individual matter and each doctor should see about it and each delegate should go back to his Society and make a point of keeping in touch with these matters. No committee can do this work as it is really a matter for each doctor in the county to get behind the congressmen and express an interest in medical affairs. They should not only say they do not favor the EMIC bill but a suitable substitute should be worked out and presented. Dr. Gorman felt the President of the Society and the Chairman of the Legislative Committee have their hands full in handling other matters. He thought the legislative fund should be used to employ a man to do this work. Dr. Moncure felt the Society could appoint a special delegate to a special meeting but did not see why some one should be employed for full time. Dr. W. R. Pretlow stated the AMA and the State Society do not have anything definite to offer and, until they do, he did not think they would get very far in just opposing everything. He felt the 14 points of the AMA are just a lot of oratory. Congressmen have a pretty good idea of what they want and the doctors do not have any well formulated programs which could be put forward in the form of a bill. He did not see what could be done unless there is something to be given in exchange for the bad. Dr. Guy Fisher asked what the Society thought of employing a lobbyist in Washington when it is necessary. He moved that the Legislative Committee be empowered to employ a representative when and if it is deemed necessary. Seconded. Dr. Hutcheson stated that as soon as a lobbyist is employed the status of an educational organization changes and you have to pay taxes. The motion, being put to vote, was lost.

Dr. Mulholland, in turning over the gavel to Dr. Rawls, stated that he had a definite mixed feeling of relief and regret in giving up his work as President. He expressed appreciation to members of the Society for the support they have given during the year. Each and everyone should go home and try to take some part in medical economics. This can't be done tomorrow or next week or next month—it has to be done today. If the doctors do not settle these problems themselves, the government will have to do it for them. The majority of senators and representatives do not want federalized medicine but they will be forced to do something if the doctors do not. Dr. Mulholland then asked Dr. Harrell to escort Dr. Rawls to the chair.

Dr. Rawls, in accepting office, said:

"I want to take this opportunity to thank you gentlemen for the very high honor you have conferred on me. As a matter of fact I have always felt that no higher compliment can be paid a physician than to elect him head of his own State Medical Association. Presumably he is among friends and they wish to pay him this honor because of their love and respect for him. I feel that in this particular instance you have made a mistake: that there are many other men in this organization who would have made you a much more satisfactory President. However, I am going to attempt to carry on. I am very fortunate in the Council that you have given me and in the fact that through the coming year I may continue to look forward to the advice of our retiring President, Dr. Mulholland, and our President-Elect, Dr. Powell. I am going to be eternally grateful for the fact that they will participate in the Council meetings.

"This should be a very eventful year to the Medical Profession throughout the entire United States. The ever-present threat of the Federal Control of medicine still has to be combated. We are welcoming back into the fold, almost each day, those of our fellow members who saw fit to leave their practice, to don uniform and see that the wrongs which were plaguing the world would be righted. It should be our privilege to see that these men are reabsorbed into the general scheme of our living with as little loss to themselves and their families as possible. It is just as much our patriotic duty to do this as it was theirs to enlist in the first place.

"This is a legislative year in Virginia and the Medical Profession should be deeply interested in many of the things which will come up: rural health, budgeting for hospital and catastrophic illnesses, the passing of adequate laws regulating Coroners, etc. There is a possibility that the Governor's budget may plan for more satisfactory care of the indigent, the tuberculous and the cancer victim. It behooves all of us, as physicians who are deeply interested in the welfare of our State, to inform ourselves thoroughly on all of these efforts to provide for the care of our citizens. I am sure that I can count on each and every one here going home with that object in view, to the end that our profession may take its rightful place in improving conditions in this Commonwealth."

The new President stated that Committee appointments for the coming year would be announced in the December issue of the MONTHLY, and letters would be sent members in advance, advising them of their appointments.

There being no further business, the meeting adjourned *sine die*.

AGNES V. EDWARDS,  
Secretary.

Approved:  
H. B. MULHOLLAND,  
President.

November 5, 1945.

## Committees

Committees of the Society appointed by the President, Dr. J. L. Rawls, for the ensuing year are given below. (Numbers after names in Standing Committees indicate length of term of office, as the By-Laws provide that new members of STANDING COMMITTEES shall be named by the in-coming President for terms of three years, except in the case of the Department of Clinical and Medical Education.)

### STANDING COMMITTEES

PUBLICATION AND PROGRAM: M. Pierce Rucker, M.D. (3), Richmond, *Chairman*; Wyndham B. Blanton, M.D. (1), Richmond; J. Edwin Wood, Jr., M.D. (2), Charlottesville.

SCIENTIFIC EXHIBITS AND CLINICS: W. Ambrose McGee, M.D. (2), Richmond, *Chairman*; McLemore Birdsong, M.D. (1), Charlottesville; H. F. Dormire, M.D. (3), Virginia Beach.

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION: H. B. Mulholland, M.D., Charlottesville, *Chairman*; George B. Zehmer, Charlottesville, *Executive Secretary*; I. C. Riffin, M.D., Richmond, *State Health Commissioner*; J. P. Gray, M.D., Richmond, *Medical College of Virginia*; Staige D. Blackford, M.D., Charlottesville, *University of Virginia*; R. Bryan Grinnan, Jr., M.D., Norfolk; H. S. Daniel, M.D., Louisa.

LEGISLATION: W. C. Caudill, M.D. (1), Pearisburg, *Chairman*; J. W. Preston, M.D. (1), Roanoke; W. Lowndes Peple, M.D. (1), Richmond; Dean B. Cole, M.D. (2), Richmond; W. A. Porter, M.D. (2), Hillsville; Alex. F. Robertson, Jr., M.D. (2), Staunton; Frank S. Johns, M.D. (3), Richmond; G. Colbert Tyler, M.D. (3), Newport News; C. C. Smith, M.D. (3), Norfolk.

MEDICAL ECONOMICS: Guy R. Fisher, M.D. (2), Staunton, *Chairman*; N. G. Wilson, M.D. (2), Norfolk; W. L. Powell, M.D. (1), Roanoke; A. B. Graybeal, M.D. (1), Marion; Walter B. Martin, M.D. (3), Norfolk; John T. Hundley, M.D. (3), Lynchburg.

MEMBERSHIP: A. M. Showalter, M.D. (1), Christiansburg, *Chairman*; J. F. Thaxton, M.D. (2), Tye River; J. Bolling Jones, M.D. (3), Petersburg.

ETHICS: J. L. Hamner, M.D. (2), Mannboro, *Chairman*; R. L. Raiford, M.D. (3), Franklin; H. W. Bachman, M.D. (1), Bristol.

JUDICIAL: P. S. Smith, M.D. (1), Abingdon, *Chairman*; J. Morrison Hutcheson, M.D. (1), Richmond; P. St. L. Moncure, M.D. (3), Norfolk.

### SPECIAL COMMITTEES

PUBLIC RELATIONS AND MEDICAL SERVICE: J. M. Emmett, M.D., Clifton Forge, *Chairman*; H. B. Mulholland, M.D., Charlottesville; I. C. Riffin, M.D., Richmond.

RURAL HEALTH: J. M. Emmett, M.D., Clifton Forge, *Chairman*; H. B. Mulholland, M.D., Charlottesville; I. C. Riffin, M.D., Richmond; James L. Hamner, M.D., Mannboro; J. A. Owen, M.D., Turbeville.

CHILD WELFARE: Emily Gardner, M.D., Richmond, *Chairman*; R. H. DuBose, M.D., Roanoke; R. B. Hightower, M.D., Alexandria; Mary E. Johnston, M.D., Taze-



well; E. C. Harper, M.D., Richmond; W. T. Graham, M.D., Richmond; F. N. Mullen, M.D., Norfolk; DuPont Guerry, M.D., Richmond; P. N. Pastore, M.D., Richmond.

**MATERNAL HEALTH:** C. J. Andrews, M.D., Norfolk, *Chairman*; A. L. Carson, M.D., Richmond; Waverly R. Payne, M.D., Newport News; F. O. Plunkett, M.D., Lynchburg; J. M. Nokes, M.D., Charlottesville; L. L. Shamburger, M.D., Richmond; H. Hudnall Ware, M.D., Richmond; G. N. Carter, M.D., Boynton; D. S. Divers, M.D., Pulaski; M. Pierce Rucker, M.D., Richmond.

**WALTER REED COMMISSION:** Clarence Porter Jones, M.D., Newport News, *Chairman*; J. D. Clements, M.D., Ordinary; James W. Smith, M.D., Hayes Store.

**TO CONFER WITH STATE BOARD OF NURSE EXAMINERS:** I. A. Bigger, M.D., Richmond, *Chairman*; C. Bruce Morton, M.D., Charlottesville; A. P. Jones, M.D., Roanoke; Russell Buxton, M.D., Newport News; J. D. Collins, M.D., Portsmouth; J. A. Gooch, M.D., Alexandria; W. C. Akers, M.D., Stuart.

**SYPHILIS CONTROL:** W. W. S. Butler, M.D., Roanoke, *Chairman*; James W. Love, M.D., Alexandria; D. C. Smith, M.D., Charlottesville; Raymond Kimbrough, M.D., Richmond; D. S. Garner, M.D., Roanoke.

**TUBERCULOSIS:** Frank B. Stafford, M.D., Charlottesville, *Chairman*; C. Lydon Harrell, M.D., Norfolk; Charles W. Scott, M.D., Burkeville; J. B. Nicholls, M.D., Catawba Sanatorium.

**MENTAL HYGIENE:** Frank Redwood, M.D., Norfolk, *Chairman*; David C. Wilson, M.D., Charlottesville; Chas. F. Graham, M.D., Wytheville; R. Finley Gayle, M.D., Richmond; J. E. Barrett, M.D., Williamsburg.

**CANCER:** George Cooper, M.D., Charlottesville, *Chairman*; E. P. Lehman, M.D., Charlottesville; I. C. Riffin, M.D., Richmond; R. L. Payne, M.D., Norfolk; Fred M. Hodges, M.D., Richmond; R. P. Bell, M.D., Staunton; Hugh H. Trout, M.D., Roanoke; I. A. Bigger, M.D., Richmond; A. B. Gathright, Jr., M.D., Richmond; Clayton W. Eley, M.D., Norfolk.

**INDUSTRIAL HEALTH:** W. L. Weaver, M.D., Richmond, *Chairman*; W. B. Barton, M.D., Stonega; H. U. Stephenson, M.D., Richmond; Alexander McCausland, M.D., Blacksburg; G. H. Kinser, M.D., Waynesboro; M. W. Healy, M.D., Norfolk; J. B. Porterfield, M.D., Richmond.

**MEDICAL EXAMINER SYSTEM:** Wyndham B. Blanton, M.D., Richmond, *Chairman*; M. B. Beecroft, M.D., Newport News; Kenneth D. Graves, M.D., Roanoke; J. Edwin Wood, Jr., M.D., Charlottesville; E. G. Scott, M.D., Lynchburg; J. H. Scherer, M.D., Richmond; W. D. Kendig, M.D., Kenbridge; G. Colbert Tyler, M.D., Newport News; Geo. C. Williams, M.D., Pearisburg; W. O. Bailey, M.D., Leesburg; A. Brownley Hodges, M.D., Norfolk; S. H. Garst, M.D., Staunton; P. W. Miles, M.D., Danville.

**NUTRITION:** W. W. Waddell, Jr., Charlottesville, *Chairman*; J. P. Gray, M.D., Richmond; Edwin A. Harper, M.D., Lynchburg; George H. Carr, Jr., M.D., Portsmouth; N. G. Wilson, M.D., Norfolk.

**ADVISORY TO WOMAN'S AUXILIARY:** P. S. Smith, M.D., Abingdon, *Chairman*; H. A. Latane, M.D., Alexandria;

H. W. Rogers, M.D., Norfolk; Reuben F. Simms, M.D., Richmond; F. S. Givens, M.D., Wise.

**REHABILITATION:** Roy M. Hoover, M.D., Roanoke, *Chairman*; Paul D. Camp, M.D., Richmond; Leroy Smith, M.D., Richmond; F. B. Stafford, M.D., Charlottesville; I. C. Riffin, M.D., Richmond; Hugh Page Newbill, M.D., Charlottesville; N. F. Rodman, M.D., Norfolk; G. B. Setzler, M.D., Pennington Gap; George A. Duncan, M.D., Norfolk.

### Auditor's Report

October 1, 1944-September 30, 1945

THE OFFICERS AND COUNCILORS,  
MEDICAL SOCIETY OF VIRGINIA,  
RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of the Medical Society of Virginia for its fiscal year ended September 30, 1945, and now present our report consisting of the following financial statements and related comments.

#### EXHIBITS

"A" Balance Sheet.

"B" Statement of Income and Expense.

"C" Receipts and Disbursements of Legislative Committee Special Fund.

#### Comments

The financial condition of the Society at September 30, 1945, is set forth in the Balance Sheet, Exhibit "A", a summary of which is given below in comparison with that at September 30, 1944:

ASSETS:	9-30-45	9-30-44
Cash .....	\$32,370.67	\$24,967.01
Accounts Receivable .....	1,127.26	989.34
Investments—U. S. Bonds .....	16,620.50	14,915.00
TOTAL .....	\$50,118.43	\$40,871.35

#### LIABILITIES AND SURPLUS:

Accounts Payable .....	\$ 976.78	\$ 786.66
Surplus:		
General Fund .....	36,940.70	30,851.29
Special Legislative Fund .....	12,200.95	9,233.40
TOTAL .....	\$50,118.43	\$40,871.35

The income and expenses of the General Fund for the fiscal year ended September 30, 1945, are shown in Exhibit "B", prepared on the cash receipts and disbursements basis. The operations for the current and the preceding year are stated in condensed form below:

INCOME:	9-30-45	9-30-44
Medical Society .....	\$ 5,538.53	\$ 5,786.80
Medical Monthly Publication .....	17,173.18	14,631.70
TOTAL .....	\$22,711.71	\$20,418.50



## EXPENSES:

Medical Society .....	\$ 5,281.52	\$ 4,349.15
Medical Monthly Publication .....	11,538.38	10,532.65
TOTAL .....	<u>\$16,819.90</u>	<u>\$14,881.80</u>
SURPLUS INCOME FOR YEAR .....	\$ 5,891.81	\$ 5,536.70

The receipts and disbursements of the Legislative Committee Special Fund, which are not included in the above tabulation, were as follows:

Receipts for the Year .....	\$ 3,017.55
Disbursements for the Year .....	50.00
Surplus Receipts for the Year .....	<u>\$ 2,967.55</u>
Add: Cash Balance—October 1, 1944 .....	9,233.40
Cash Balance—September 30, 1945 .....	<u>\$12,200.95</u>

The membership dues are \$7.00 annually and the collections from these are apportioned:

For General Fund Expenses .....	\$ 3.00
For Subscriptions to the Medical Journal .....	2.00
For Legislative Committee Expenses .....	2.00

The cash balances of the Society at September 30, 1945, were confirmed by certificates from the following depositaries:

## GENERAL FUND:

First & Merchants National Bank—Checking Account .....	\$15,957.37
First & Merchants National Bank—Savings Account .....	1,650.26
The Morris Plan Bank of Virginia—Savings Account .....	1,643.72
Southern Bank & Trust Company—Savings Account .....	918.37
TOTAL .....	<u>\$20,169.72</u>

## LEGISLATIVE COMMITTEE SPECIAL FUND:

First & Merchants National Bank—Savings Account .....	\$12,200.95
Investments in United States Savings Bonds as of September 30, 1945, were verified by inspection of the bonds as follows:	

SERIES	DATE ACQUIRED	DATE OF MATURITY	VALUE AT MATURITY	COST	VALUE AT 9-30-45
B	2-1-36	2-1-46	\$ 700.00	\$ 525.00	\$ 686.00
D	10-1-39	10-1-49	2,000.00	1,500.00	1,700.00
D	3-1-40	3-1-50	500.00	375.00	420.00
F	2-1-43	2-1-55	5,000.00	3,700.00	3,770.00
F	12-1-43	12-1-55	8,500.00	6,290.00	6,332.50
F	1-1-44	1-1-56	500.00	370.00	372.50
F	2-1-44	2-1-56	1,500.00	1,110.00	1,117.50
F	6-1-44	6-1-56	1,000.00	740.00	742.00
F	12-1-44	12-1-56	1,000.00	740.00	740.00
F	5-1-45	5-1-57	1,000.00	740.00	740.00
TOTALS .....			<u>\$21,700.00</u>	<u>\$16,090.00</u>	<u>\$16,620.50</u>

Accounts Receivable for membership dues and for advertising in the Medical Monthly Publication are stated

at collectible value as estimated by the Secretary-Treasurer.

Insurance carried, according to policies on hand, was as follows:

Office Furniture and Fixtures .....	\$ 1,000.00
Walter Reed Home, Belroi, Virginia .....	1,000.00
Fidelity Bond, Secretary-Treasurer .....	2,500.00

All cash receipts of record were accounted for by bank deposits, and disbursements were supported by paid bank checks properly signed and endorsed. The bookkeeping records for the year under review were found in proper order.

Respectfully submitted,

SHEPHERD, JACKSON & WIGGINS,  
Certified Public Accountants.

### Balance Sheet—September 30, 1945 Exhibit "A"

ASSETS	
CASH:	
General Fund (Exhibit "B") .....	\$20,169.72
Special Fund (Exhibit "C") .....	<u>12,200.95</u>
	\$32,370.67

## DUE FROM MEMBERS

(Estimated Collectible Value):

1945 Dues—40 @ \$7.00 .....	280.00
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## ACCOUNTS RECEIVABLE:

Virginia Medical Monthly for Advertising .....	847.26
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## INVESTMENTS:

United States Savings Bonds .....	16,620.50
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TOTAL ASSETS .....	<u>\$50,118.43</u>
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## LIABILITIES AND SURPLUS

## ACCOUNTS PAYABLE:

Preparation of Medical Journal:

September, 1945, Issue .....	\$ 752.08
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Federal Withholding Tax .....	200.70
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Social Security Tax .....	24.00
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\$ 976.78

## SURPLUS:

General Fund .....	\$36,940.70
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Special Fund—Legislative Committee .....	<u>12,200.95</u>
	49,141.65

TOTAL LIABILITIES AND SURPLUS .....	<u>\$50,118.43</u>
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### Statement of Income and Expense For Fiscal Year Ended September 30, 1945

## Exhibit "B"

## MEDICAL SOCIETY OF VIRGINIA DIVISION

INCOME:	ACTUAL	BUDGET
Membership Dues @ \$3.00 each .....	\$ 4,439.55	
Royalties on History of Medicine .....	49.35	
Interest on Savings Accounts (1/2) .....	17.49	
Commercial Exhibits—Net Receipts .....	513.59	
Richmond Academy of Medicine—Refund on 1944 Appropriation for Convention Expense .....	518.55	
TOTAL .....	<u>\$ 5,538.53</u>	

## EXPENSES:

## Salaries (Apportioned):

Secretary-Treasurer	\$1,800.00	
Clerical Assistance	1,080.00	
	<u>\$ 2,880.00</u>	<u>\$ 2,880.00</u>
Office Rent and Telephone	368.51	375.00
Stationery and Office Supplies	51.81	75.00
Repairs and Replacements	10.75	40.00
Postage	131.79	225.00
Audit Fee (1/2)	37.50	30.00
Social Security Tax (1/2)	24.00	30.00
Miscellaneous Expense	24.47	25.00
State Convention Expense	487.01	600.00
Delegates Expense to A.M.A.		
Convention		150.00
President's Expense	113.51	100.00
President-Elect's Expense		50.00
Councilors' and Officers' Expense	59.03	75.00
Walter Reed Commission	18.00	75.00
Department of Clinical and Medical Education	482.59	600.00
Committee on Scientific Exhibits	156.35	350.00
Committee on Child Welfare		10.00
Committee on Maternal Health	13.50	20.00
Committee on Cancer	95.70	120.00
Committee on Industrial Health	20.00	20.00
Refund of Dues	7.00	
Special Appropriation—Executive Office	300.00	300.00
	<u>\$ 5,281.52</u>	<u>\$ 6,150.00</u>

SURPLUS INCOME FOR YEAR \$ 257.01

## VIRGINIA MEDICAL MONTHLY DIVISION

INCOME:	ACTUAL	BUDGET
Advertising	\$13,824.95	
Subscriptions:		
Membership Dues @		
\$2.00 each	\$2,959.70	
Non-Members	371.05	
	<u>3,330.75</u>	
Interest on Savings Account (1/2)	17.48	
	<u>\$17,173.18</u>	

## EXPENSES:

## Salaries (Apportioned):

Secretary-Treasurer	\$1,800.00	
Clerical Assistance	1,080.00	
	<u>\$ 2,880.00</u>	<u>\$ 2,880.00</u>
Preparation of Journal—Including		
Distribution Cost	7,804.95	7,500.00
Rent and Telephone	367.16	375.00
Stationery and Office Supplies	44.75	35.00
Repairs and Replacements	10.75	40.00
Office Postage	43.80	55.00
Audit Fee (1/2)	37.50	30.00
Social Security Tax (1/2)	24.00	30.00
Miscellaneous Expense	25.47	20.00
Special Appropriation—Executive Office	300.00	300.00

TOTAL \$11,538.38 \$11,265.00

SURPLUS INCOME FOR YEAR \$ 5,634.80

## SUMMARY OF OPERATIONS

DIVISION	ACTUAL INCOME	ACTUAL EXPENSES	SURPLUS INCOME
Medical Society	\$ 5,538.53	\$ 5,281.52	\$ 257.01
Medical Journal	17,173.18	11,538.38	5,634.80
	<u>\$22,711.71</u>	<u>\$16,819.90</u>	<u>\$ 5,891.81</u>

## Legislative Committee Special Fund Receipts and Disbursements

For Fiscal Year Ended September 30, 1945

## "Exhibit "C"

BALANCE—OCTOBER 1, 1944 \$ 9,233.40

## RECEIPTS:

Membership Dues @ \$2.00 each	\$ 2,955.00	
Interest on Savings Account	62.55	3,017.55
	<u></u>	<u></u>
TOTAL		\$12,250.95

## DISBURSEMENTS:

Legal Service 50.00

BALANCE—SEPTEMBER 30, 1945:

(Deposited in Special Savings Account) \$12,200.95

## WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

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*President*.....MRS. P. M. CHICHESTER, Abingdon  
*President-Elect*.....MRS. J. E. HAMNER, Petersburg  
*Recording Secretary*.....MRS. NATHAN SCHUMAN, Alexandria  
*Corresponding Secretary*.....MRS. L. C. BRAWNER, Richmond  
*Treasurer*.....MRS. REUBEN F. SIMMS, Richmond

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### The President's Message.

The program for the year will be the continuation of the one appropriately started by our national organization, that of Juvenile Delinquency and Physical Fitness.

As physicians' wives it is fitting that our first objective is a program which deals directly with interpreting the aims of the medical profession and health education. At all times our work must be done through and approved by our Advisory Council.

Our program should be sufficiently interesting to attract new members, increase attendance at meetings and stimulate interest in health education. The following suggestions may be used in conducting meetings. Will you please report meetings?

It is recommended that the Constitution and By-Laws of our State Auxiliary be read and discussed at one meeting each year.

Invite the secretary and president of the county medical society to address the auxiliary annually at the first meeting.

Have all committee chairmen report on activities at each meeting. (This serves to make individual members more alert to auxiliary interests.)

The *Bulletin* should be read and studied by every doctor's wife. Our aim again is to have every auxiliary member a subscriber. Through it we get the over-all program of the auxiliary and thereby broaden our view.

The August issue of the *Bulletin* has the program for the year outlined in it. Our national president has suggested that we read the article on Post-War Planning by Dr. Herman L. Kretschmer, president of the American Medical Association, at one of our meetings. Dr. Kretschmer urges the promotion of educational programs on the benefits of animal experimentation to the advance of medicine, the prevention of accidents and the study of nutrition. Malnutrition may not be due to lack of food but to haphazard eating habits.

For many years one of the chief activities of the auxiliary has been the promotion of the circulation of *Hygeia* as a means of health education for auxiliary members and for the public. A review of current articles from *Hygeia* may be included in your monthly programs.

State auxiliaries are always to be guided by their respective advisory councils in all matters relative to legislation. We are urged to study the prepaid voluntary health insurance and medical care plans as approved by the Medical Society of Virginia and the American Medical Association.

Our national public relations chairman has stressed the holding of at least one health meeting this year. These health programs may be held in cooperation with the Summer Round-Up of Children sponsored by the Parent-Teacher Association (see National Council Pamphlet). County advisors should be consulted as to plans for cooperation with other groups. The rejection of millions as physically unfit is a challenge to the nation. Public opinion can be molded in matters of health and education.

The medical profession has joined with public health officials, social agencies and schools to improve these programs.

Prepare exhibits of educational value for local use and annual state meetings. These may depict memorials sponsored by the auxiliary, cancer control or sick room conveniences, such as that exhibited by the Petersburg auxiliary in 1940.

War and reconstruction activities must be continued.

Study our membership figures. Endeavor to enlist others.

Study and refer frequently to the *Journal of the American Medical Association*, the *VIRGINIA MEDICAL MONTHLY*, *Hygeia*, the *Bulletin* and the *Handbook*.

A better world can only be achieved through constructive activity. It is possible for the individual personality to play an increasingly greater part in bringing about good.

I am asking the earnest cooperation of every auxiliary and every member in carrying on our work of the year.



I appreciate your confidence in me and consider it a privilege to become president in an organization which has so great an opportunity to serve.

MARIE C. CHICHESTER

(MRS. PEYTON MONCURE CHICHESTER)

### Norfolk Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society held its twenty-third Annual Meeting November 5 in the Library of the Medical Arts Building. Mrs. Southgate Leigh, the President, presided. Following the opening prayer, Mrs. Walter J. Adams held the Memorial Service for Mrs. R. L. Payne, Sr., Mrs. Southgate Leigh, Sr., and Mrs. Milton Bland.

Mrs. Charles Lupton, delegate, reported on the State meeting which was held in Richmond October 16. It was noted that Mrs. R. M. Reynolds of this chapter had been appointed Public Relations Chairman. It was also announced that Mrs. W. L. Harris had been made an Honorary Member of the State Auxiliary and that the State Auxiliary had sent ten dollars to the Leigh-Hodges-Wright Memorial Fund, as a memorial to Mrs. Southgate Leigh.

A letter was read from Mrs. A. K. Wilson, tendering her resignation as Treasurer, as they are moving from Norfolk. This was accepted with regret.

Annual reports of all officers and Committee Chairmen were given, and the Parliamentarian, Mrs. C. C. Smith, presented a resolution, thanking Mrs. Leigh and other officers for their faithful and suc-

cessful work during the year.

New officers were then installed as follows:

President: Mrs. C. M. McCoy; President-Elect: Mrs. Charles H. Lupton; Vice-Presidents: Mrs. K. W. Howard, Mrs. W. R. Tyson and Mrs. W. C. Salley; Recording Secretary: Mrs. Kenneth Wallace with Mrs. M. F. Brock as assistant; Treasurer: Mrs. M. S. Andrews with Mrs. J. R. Kight assistant; Corresponding Secretary: Mrs. P. B. Parsons with Mrs. W. B. Taliaferro assistant; Parliamentarian: Mrs. C. C. Smith; Historian: Mrs. J. W. Anderson.

### COMMITTEES AND COMMITTEE CHAIRMEN

*Advisory:* Mrs. K. W. Howard, Mrs. H. W. Rogers, Mrs. M. S. Andrews; *Finance:* Mrs. M. S. Andrews, Mrs. Southgate Leigh, Jr., Mrs. W. E. Butler; *Revisions:* Mrs. H. W. Rogers, Mrs. C. C. Smith, Mrs. Franklin Wilson; *Telephone:* Mrs. Stark Sutton, Mrs. George Renn, Mrs. W. P. McDowell, Mrs. J. L. Rawls; *Bulletin:* Mrs. B. A. Doggett; *Health Education:* Mrs. R. M. Reynolds; *Hygeia:* Mrs. Michael Greenwald; *Jane Todd Crawford:* Mrs. Ben Steingold; *Public Relations:* Mrs. Albert Horton; *Press and Publicity:* Mrs. M. F. Brock; *Social:* Mrs. W. E. Butler; *Birthday:* Mrs. C. C. Cooley; *Courtesy:* Mrs. J. W. Reed; *Membership:* Mrs. K. W. Howard; *War Fund:* Mrs. C. J. Devine; *War Service:* Mrs. J. W. Anderson.

KATHERINE B. SALLEY

*Press and Publicity Chairman.*

### Eye-Bank for Sight Restoration.

Similar to the function of blood banks in restoring exhausted blood supply, the Eye-Bank for Sight Restoration was organized with headquarters at 210 East 64 Street, New York 21, to make possible the restoration of sight of persons whose vision has been destroyed because of corneal affections by replacement with healthy tissue from the eyes of other persons. Of the 250,000 persons in the United

States presently blind, it is estimated that the sight of approximately 10,000 might be restored if healthy corneal tissue were available for the corneal graft operation.

Further information may be obtained from the Eye-Bank whose purpose it is to locate, obtain and have accessible wherever and whenever needed the all-important corneal tissue.

# VIRGINIA MEDICAL MONTHLY

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(Founded by Landon B. Edwards, M. D., April, 1874)

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## The Fiftieth Anniversary of Roentgen Rays

ON December 28, 1895, Wilhelm Conrad Roentgen, Professor of Physics at the University of Würzburg, read a preliminary report before the Würzburg Physical Medical Society on a new kind of rays (Ueber eine neue Art von Strahlen, *Sitzungsb. d.phys.-med. Gesellsch. zu Würzb.*, 1895, 132-141). He suggested that the rays be called x-rays. Professor Kölliker presided at the meeting, and at his suggestion the Society voted to call the new energy the "Roentgen ray". A translation of this original report is to be found in Clendening's *Source Book of Medical History*. It makes interesting reading today when the world is celebrating the fiftieth anniversary of the discovery of the Roentgen ray and is debating the question of the control of atomic energy.

Wilhelm Conrad von Röntgen was born March 27, 1845, at Lennep, a little town in the Prussian Rhine near Düsseldorf. He received his early instruction in Holland and then went to study at Zürich. He became assistant to Kundt at Würzburg and at Strasbourg. He must therefore have been well trained in the investigation of sound and light waves. In 1874 he became *Privatdozent* at Strasbourg and the following year professor of mathematics and physics at the Agricultural Academy at Hohenheim. In 1876 he returned to Strasbourg as extraordinary professor. In 1879 he was chosen ordinary professor of physics and director of the Physical Institute at Giessen and in 1885 he went to Würzburg in the same capacity. Finally he was professor of physics at the University of Munich. He died in Munich February 10, 1923.

It was at Würzburg, while experimenting with a highly exhausted vacuum on the conduction of electricity through gases that Roentgen observed the fluorescence of a barium platinocyanide screen that happened to be lying near. It has been said that the discovery of the x-rays was an accident; and the proximity of the screen to the Crocks tube was an accident, but Roentgen, trained physicist that he was, recognized that here was a phenomenon that required investigation. His preliminary report shows how well he conducted this investigation.

He showed that an active agent passed through black card board that is opaque to the visible and ultra violet rays of the sun or electric arc. He showed that all bodies are transparent to this agent but in different degrees, depending mainly upon the density of the substance. Density, however, was not the only cause, for substances of nearly the same density such as glass, aluminum, calcite and quartz, vary in transparency to the agent. He showed that other bodies besides barium platinocyanide fluoresce and discussed the question whether the agent acted directly on the silver salts of photographic plates, or by fluorescent light in the glass plate or the gelatin of the film. Prisms of various substances failed to deflect the rays nor could the rays be reflected. He found that x-rays differed from the cathode rays in being far less absorbable by air and other substances. Furthermore the cathode rays can be deflected by a magnet, whereas x-rays cannot. By changing the direction of the cathode rays within the tube by magnetic influence he was able to change the place on the glass wall where the x-rays are generated by the cathode rays striking the glass wall. This transformation takes place also in aluminum. He justified the term "rays" for the agent by the regular form of the shadows produced by relatively opaque bodies. Another conclusive proof of the rectilinear propagation of the x-rays was a pin-hole photograph which he was able to make of the discharge apparatus while it was enveloped in black paper. He differentiated x-rays from ultra violet rays by the fact they suffer no refraction on passing from air into water, carbon disulphide, aluminum, rock-salt glass, zinc, etc. They cannot be reflected by any of the bodies named. They cannot be polarized by any of the ordinary methods. Their absorption is influenced by no other property of substances so much as by their density. He postulated that the rays were due to longitudinal vibrations in the ether.

Interestingly enough at the first public demonstration of the Roentgen rays, Professor Kölliker, who presided at the meeting submitted to having his hand photographed by the new ray. The bones were plainly visible. Thus at the very beginning a medical use for the rays was indicated, but it is a far cry from visualizing the bones of the hand to marvelous things in diagnosis and therapy that one is able to do with the Roentgen rays today.

### Maternal and Infant Care in Virginia

IT has been said that the care a people gives its pregnant women is an index of its civilization. Certainly the infant mortality rate is one of the best measures of the efficiency of the Public Health work of a community. We are glad to be able to report that Virginia's maternal mortality has steadily declined in the past ten years until in 1944 it reached the figure of 2.8 per thousand live births. There has been a corresponding improvement in infant mortality. In 1931 the maternal mortality rate was 7.6 and in the year of the great influenza epidemic, 1918, it was 10.4. In 1919 it was actually more dangerous for a woman to have a baby in Richmond than it was for her husband to fight in World War I (Hudson, C. C. and Rucker, M. P.; *Maternal Mortality in Richmond, VIRGINIA MEDICAL MONTHLY*: p. 300, August, 1923). The maternal mortality rate per 1,000 live births was 5.8, white; 13.4, colored; 8.2, total.

Such figures are not peculiar to Richmond or Virginia. The rates were disgraceful throughout the nation and likewise there has been an almost unbelievable nation-wide improvement. In the nineteen twenties at almost every meeting of obstetricians someone would quote figures to prove that the United States had the highest maternal mortality of any civilized nation except Chile. Some of the leaders in obstetrics were con-



tent to show that the statistics in the various countries were not comparable, but the majority got down to work to find out the actual facts. Committees of doctors, notably the New York Academy of Medicine, the Philadelphia County Medical Society, and certain State Societies undertook to investigate every maternal death. When they had gathered the facts they discussed the cases in open meetings, and published reports of their investigations. No doubt there were other factors in this great renaissance of obstetrics, but this fact-finding investigation was the beginning, as much so in fact, as the discovery of printing put an end to the dark ages.

The details of the movement must have varied in the various localities. In Virginia, the State Society appointed a committee on maternal mortality. Later the name of this committee was changed to the Committee on Maternal Health. Its first undertaking was to sponsor a series of refresher courses in obstetrics for physicians throughout the State. A full time obstetrician was employed and refresher courses conducted in the cities and larger towns of the State during a two and one-half year period ending in 1934. This did much to develop the interest of many of the physicians of the State in problems of maternal care. The Committee's next goal was to establish at least one prenatal clinic in every county in Virginia. The Committee joined forces with the Bureau of Maternal and Child Health of the State Department of Health. Clinics were set up as rapidly as possible. The State Department of Health furnished the equipment, records, and nursing services, and the local profession the clinicians. The two obstetricians of the State Health Department's Bureau of Maternal and Child Health organized the clinics and furnished consultative service and general supervision. A little later they began to obtain data on each maternal death. This data, with names and places deleted, was discussed in detail by the Committee on Maternal Health. It was not possible to have the doctors and midwives involved from all over the State attend the meetings to explain the circumstances or to defend themselves, so the cases were kept anonymous. Each month a case illustrating some error of judgment or treatment was published in the MONTHLY, and at several annual Meetings of the Medical Society of Virginia the Committee on Maternal Health met with the Virginia Obstetrical and Gynecological Society and as many other doctors who were interested.

In this way the mistakes, but not the persons making them, were given as much publicity as possible. The war-time lack of sufficient medical personnel in the State Health Department's Bureau of Maternal and Child Health temporarily put a stop to the gathering of local data on maternal deaths. When this service can be resumed, it is planned that the Committee on Maternal Health meet in different parts of the State so that all Virginia doctors can have an opportunity of taking part in the discussions. It was not long after the prenatal clinics were started that the problem of what to do with the complicated case arose. How this was solved by the State Department of Health was told by Dr. C. J. Andrews in an editorial in the April MONTHLY (72:181, 1945). One county was chosen as an experiment. Any indigent maternity patient ill enough to require hospital treatment could be sent to a hospital, with the expense of hospitalization arranged through the Bureau of Maternal and Child Health of the State Health Department. The only test imposed was that the local referring physician recommend the hospitalization on the basis of indigency and pathology. Local welfare departments have cooperated in this plan by furnishing transportation in many instances. The State Department of Health arranges the details incident to securing hospital care. This plan proved so successful that in July 1942 it was extended to all rural areas served by official county health departments. Later, it was expanded to include all rural areas of the State. By November 15th of this

year 2,263 patients have been hospitalized. Of these 1,422 were obstetric and 841 pediatric. Of these, approximately 60 per cent were white and 40 per cent were colored patients. One hundred and thirty-seven prenatal clinics and sixty-six hospitals are participating in the plan. The operation of the plan has involved a total expenditure of \$182,185.00 from the State Department of Health; the cost has averaged \$78.50 per obstetric patient.

### Poise

**N**EXT to sympathy, poise is perhaps the most important attribute for those who care for the sick. The word is derived from the French word meaning weight. We see it in the original sense in our word *avoir du poids*, but the weight in poise comes from knowledge; hence, the implication of worth and importance. It also carries the idea of balance and stability. It also means a way of carrying the body or head, which is impossible without a sense of worth and imperturbability that comes from knowledge. A faultlessly groomed nurse who moves as quietly and majestically as a ship in full sail is the very personification of poise. Doctors should possess this quality also—without the glamour. The sureness, which goes with poise like an aroma, gives the patient a sense of security that is of distinct therapeutic value.

## Societies

### The Wise County Medical Society

Held its October meeting on the 30th at Appalachian Hotel, Appalachia, as guests of Dr. F. E. Handy, with an attendance of thirty-two. Of the five doctors absent, three were sick. Dr. C. B. Bowyer of Stonega reported on the recent State Society meeting in Roanoke and discussed vital problems of reconviction. Dr. Rufus M. Morison of Abingdon spoke on heart disease, laying special stress on angina pectoris. Dr. Rupert E. Kelly of the Norton Clinic was elected to membership. Dr. Bowyer invited the Society to meet at the same place in January as guests of the Medical Department of the Stonega Coal and Coke Company.

Dr. C. L. Harshbarger and Dr. Thomas J. Tudor, both of Norton, are president and secretary, respectively.

### Southwestern Virginia Medical Society.

At the meeting of this Society on October 4, under presidency of Dr. W. A. Porter of Hillsville, with Dr. G. C. Williams of Pearisburg at the secretary's desk, the following officers were elected for the ensuing year: President, Dr. A. P. Jones of Roanoke; vice-president, Dr. Charles F. Graham of Wytheville; and secretary-treasurer, Dr. Andrew F. Giesen

of Radford. The next meeting will be in the Spring of 1946.

### Roanoke Academy of Medicine.

At the November meeting of the Academy on the 5th of the month, the scientific program included the following papers:

Medicine in England—Dr. Marcellus Johnson

Rehabilitation of the Blind—Dr. William F. Hatcher

Personal Experiences with War Medicine—Dr. Henry Lee

Dr. T. J. Hughes and Dr. George S. Bourne are president and secretary, respectively of the Academy.

### The Virginia Peninsula Academy of Medicine

Was addressed by Dr. Hugh Page Newbill of the University of Virginia at its meeting on October the 15th, at which time there was an attendance of sixty-five. Dr. Newbill's subject was "Diagnosis and Therapy of Convulsive Seizures".

At its meeting on November 19, Dr. Lemuel Whitley Diggs of the Cleveland Clinic, Cleveland, Ohio, spoke on the subject, "Hemorrhagic Diseases".

Officers of this Society are: President: Dr. Harvey G. Bland; vice-president, Dr. Russell Buxton; secretary-treasurer, Dr. Chester D. Bradley. All are of Newport News.

## News

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### **Southern Medical Association.**

The meeting of this Association in Cincinnati, the middle of November was excellent in every way and the attendance large. At this time, Dr. M. Y. Dabney, Birmingham, editor of the Southern Medical Journal, succeeded to the presidency, and Dr. Elmer L. Henderson of Louisville was named President-elect. Dr. L. A. Ledoux of New Orleans was elected first vice-president. Dr. T. Dewey Davis of Richmond was elected a member of the Council of the Association for a term of five years. Place of meeting for the 1946 session will be decided upon in the Spring.

In the sectional meetings, several Virginia doctors were named officers: Dr. J. Asa Shield, Richmond, chairman of Section on Neurology and Psychiatry, and Dr. Waverly R. Payne, Newport News, of the Section on Obstetrics; Dr. R. V. Funsten, Charlottesville, was elected vice-chairman of the Section on Orthopedic and Traumatic Surgery; Dr. J. P. Gray of Richmond, secretary of the Section on Medical Education and Hospital Training, and Dr. W. Ambrose McGee, Richmond, secretary of the Section on Pediatrics.

### **News from the University of Virginia, Department of Medicine.**

Dr. Chalmers Laughlin Gemmill, Associate Professor of Physiology at Johns Hopkins Medical School and for the past four years on leave of absence as Commander in the Medical Corps, USNR, in charge of aviation medicine research at the Naval Air Station in Pensacola, Florida, has been appointed Professor of Pharmacology in the School of Medicine at the University of Virginia as successor to the late Dr. James Alexander Waddell.

Dr. Henry B. Mulholland spoke on September 25th at meetings of the Danville Medical Society and the Danville Rotary Club on the subject "The Need for Medical Care and Hospitals in Virginia." Dr. Mulholland attended the meeting of the Council on Public Relations and Medical Care which was held in Chicago on October 19th and 20th.

Dr. Vincent W. Archer presented a paper written by Dr. Archer and Dr. Norman Adair on the subject "Roentgen Diagnosis of Placenta Previa without

Contrast Material" at the meeting of the Southern Medical Association held in Cincinnati on November 12th through 15th.

Dr. Archer attended the North Carolina State Medical meeting in Durham and presented a paper on the subject "Bone Lesions in Children."

Dr. H. E. Jordan and Dr. H. B. Mulholland attended the annual meeting of the Association of American Medical Colleges in Pittsburgh on October 29th and 30th.

The Faculty of the School of Medicine gave a Home-Coming reception for the personnel of the Eighth Evacuation Hospital, recently returned from service in North Africa and Italy, on Sunday afternoon, November 11th. Brief talks were made by Dean H. E. Jordan, Col. E. C. Drash, Captain Ruth Beery, and Chaplain William H. Laird. Views of the various activities of the Unit were shown by Captain W. P. Snavelly.

The Department of Medicine of the University of Virginia in conjunction with the Medical College of Virginia is planning to offer an intensive two weeks refresher course in General Medicine every three months for the next year. These courses will be comprised of lectures, clinics, ward rounds, clinicopathological conferences and round table discussions. The first course is being held from December 3rd to December 15th, at the University of Virginia. Any physician wishing details about other courses at the University should address Box 1725, University Station, Charlottesville, Virginia. Those desiring information about the course to be given by the Medical College of Virginia in March and September should address Dean J. P. Gray, Medical College of Virginia, Richmond. While the courses are planned primarily for returning veterans, civilians will be accepted insofar as places are available to a limit of fifty.

### **Dr. George M. Caldwell,**

Recently discharged from the Navy but formerly of White Sulphur Springs, W. Va., has located for practice in Christiansburg with his office at the New Altamont Hospital.



### Released from Service.

In addition to names previously published, we have been advised that the following members of the Medical Society of Virginia have been released from Service:

Dr. J. E. Amiss, New Market.  
 Dr. F. P. Barrow, Portsmouth.  
 Dr. Kenneth N. Byrne, Lexington.  
 Dr. Julian B. Doss, Pen Hook.  
 Dr. Samuel F. Driver, Troutville.  
 Dr. George A. Duncan, Norfolk.  
 Dr. H. D. Fitzpatrick, Radford.  
 Dr. T. L. Gemmill, Radford.  
 Dr. A. Stephens Graham, Richmond.  
 Dr. Jas. N. Greear, Washington.  
 Dr. P. G. Hamlin, Williamsburg.  
 Dr. William R. Hill, Richmond.  
 Dr. H. H. Hines, State Farm.  
 Dr. F. Read Hopkins, Lynchburg.  
 Dr. L. A. Houff, Clifton Forge.  
 Dr. H. G. Hudnall, Covington.  
 Dr. J. Bernard Jones, Culpeper.  
 Dr. C. W. LaFratta, Richmond.  
 Dr. J. C. LeFon, Richmond.  
 Dr. Luther B. Lowe, Pearisburg.  
 Dr. J. B. McKee, Winchester.  
 Dr. John G. McNiel, Farmville.  
 Dr. Walter B. Martin, Norfolk.  
 Dr. Richard A. Michaux, Richmond.  
 Dr. Edward A. Mitchell, Clinchco.  
 Dr. James Parrish, Portsmouth.  
 Dr. Thos. B. Payne, Fredericksburg.  
 Dr. Chas. H. Peterson, Roanoke.  
 Dr. Jos. T. Phillips, Jr., Norfolk.  
 Dr. Charles R. Robins, Jr., Richmond.  
 Dr. Dennis H. Robinson, Bedford.  
 Dr. Carter R. Rowe, Fredericksburg.  
 Dr. Herbert G. Ruffin, Arvonnia.  
 Dr. E. Bowie Shepherd, Richmond.  
 Dr. R. C. Siersema, Richmond.  
 Dr. Wm. L. Taliaferro, Norfolk.  
 Dr. W. Taliaferro Thompson, Jr., Richmond.  
 Dr. Garnet R. Tureman, Richmond.  
 Dr. B. K. Weems, Waynesboro.  
 Dr. H. F. White, Fishersville.  
 Dr. Reid White, Lexington.  
 Dr. J. Powell Williams, Richmond.  
 Dr. Fletcher J. Wright, Jr., Petersburg.

### Promotions.

Promotions have been noted recently for the following Virginia physicians:

Dr. Edmund Horgan, Delaplane and Washington, D. C., to Colonel, A.U.S.  
 Dr. J. M. Dixon, Roanoke, to Lieutenant-Colonel, A.U.S.  
 Dr. Emerson M. Babb, Ivor, to Major, A.U.S.  
 Dr. Edward Gill Face, Jr., Richmond, to Captain, A.U.S.

Dr. C. K. C. Hoyle, Charlottesville, to Commander, U.S.N.R.

Dr. A. S. Hurt, Richmond, to Commander, U.S.N.R.

### Dr. Robert H. Flynn, Jr.

Has located at Radford, where he is engaged in eye, ear, nose and throat disease practice. He is a graduate of the Medical College of the State of South Carolina and recently served a residency in the Post-Graduate Medical School in New York City.

### The Richmond Eye, Ear, Nose and Throat Society

Held its regular meeting in the Founders' Room of the Medical College of Virginia on October 23rd, with Dr. Luther C. Brawner presiding. The following papers were presented:

Relationship of Diseases of the Sinuses and Chest Diseases—Dr. L. James Buis.

Relationship Between Refractive Errors and Headache—Dr. L. Benjamin Sheppard.

### Dr. R. Campbell Manson,

Of Richmond, recently released from Service, in which he served with the 45th General Hospital with the rank of major, received the bronze star medal for meritorious achievement in connection with military operations in Italy. In the early months of 1944, Major Manson instigated the care and treatment of venereal diseases and took an active part in the clinical investigation in the use of penicillin in the treatment of pyodermas, the results of which formed the basis for the preparation of the Mediterranean Theater Monograph on dermatology. In addition he gave more than 4,500 consultations in connection with cases reported to him from all the other hospitals in and around Naples, and for the entire time was ward officer in charge of a very active ward and operated an out-patient clinic which averaged more than 1,000 visits monthly.

### Fellowships Offered in Neuropsychiatry.

For the benefit of those interested in neuropsychiatry, the Austin Riggs Foundation of Stockbridge, Massachusetts, has announced that fellowships for three years' training in this specialty are now open. Army personnel who wish to go into the field of neuropsychiatry may apply to Doctor Charles H. Kimberly, Medical Director, Austin Riggs Foundation, Stockbridge, Massachusetts.

**Dr. Richard C. Neale,**

For several years a well known clinical pathologist in Richmond, has moved to Bluefield, W. Va., where he is connected with the Bluefield Sanitarium.

**Birth.**

Dr. and Mrs. Kenneth N. Byrne, Lexington, announce the birth of a daughter, Judith Wakefield, on October the 25th.

**Dr. W. E. Baker,**

Who has for several years been in charge of the Venereal Disease Control work of the Virginia State Department of Health, has located in Alexandria, where he will be associated with Dr. James W. Love in the practice of their specialty.

**The Kansas Medical Society**

Announces its 87th Annual Meeting to be held in the Forum, at Wichita, Kansas, Monday, April 22 through Thursday, April 25, 1946, and an invitation is extended to all members of the Medical Society of Virginia to visit with them during that occasion.

**X-Ray in Tuberculosis.**

"The chest x-ray, reinforced and supplemented by a wide and wise choice of diagnostic aids, has brought us far along the road toward control of human tuberculosis. In this year of 1945 medicine pays its sincere respects to a half century of progress in the employment of an invaluable procedure. It is a happy circumstance that we celebrate at the same time the centennial of Wilhelm Conrad Roentgen's birth." (*Amer. Rev. Tuberc.*)

For the past several years the National Tuberculosis Association and its affiliated associations have devoted a substantial portion of its Christmas Seal funds to stimulation of mass x-ray services to students of high school and college age, industrial and manufacturing concerns as well as certain community groups where the incidence of tuberculosis is high.

The annual **Christmas Seal Sale** is now in progress throughout the nation and funds from this source will be used again this coming year to further the use of x-ray as an aid to early diagnosis of tuberculosis. Your financial and moral support of the campaign will hasten the control of this disease.

**Geriatrics,**

A new bi-monthly medical journal, devoted to research and clinical reports on the processes and the diseases of the aged and aging, will appear in January. The need for a journal of this type has been increasingly apparent for some time, as the market among patients of fifty and over is growing steadily. The editorial direction of *Geriatrics* will stress the investigations and advances made in the study of geriatrics and report on the clinical applications of new developments.

The editor is Dr. A. E. Hedback, who has been the editor of *Modern Medicine* since its inception. The editorial board serving with Dr. Hedback consists of a group of distinguished medical authors and editors, specialists in the field of geriatrics.

**Dr. Galen G. Craun,**

Who has been located in Richmond since his graduation from the Medical College of Virginia in 1940, located in Harrisonburg, the first of December, with offices at 68 East Market Street. He will limit his work to surgery.

**Dr. R. M. DeHart**

Announces his removal from Christiansburg to Radford, Va.

**Announcement of Van Meter Prize Award.**

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held in Chicago, in April or May 1946, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy sent to the corresponding Secretary, Dr. T. C. Davison, 207 Doctors Building, Atlanta 3, Georgia, not later than February 20, 1946. The Committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the

annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

#### **Personnel Changes in State Health Department.**

Dr. John G. McNiel has returned to duty, after service in the army, and has been assigned as health officer of the Southside Health District, with headquarters at Farmville.

Dr. W. W. Griggs has been appointed as health officer of the Page-Warren-Shenandoah Health District, and will be located at Luray.

#### **Any Physician May Exhibit "When Bobby Goes to School" to the Public.**

Under the rules laid down by the American Academy of Pediatrics, their educational-to-the public film, "When Bobby Goes to School", may be exhibited to the public by any licensed physician in the United States.

All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film in advance of public showings in the community.

"When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

#### **Spring Graduate Course.**

The Gill Memorial Eye, Ear and Throat Hospital of Roanoke will hold its nineteenth Annual Spring Graduate Course in Ophthalmology, Otolaryngology, Rhinology, Laryngology, Facio-Maxillary Surgery, Bronchoscopy and Esophagoscopy in that city from April 1 to 6, 1946. Guest members of the faculty will be: Drs. Louis H. Clerf, Rudolph J.

Jaeger and Isaac S. Tassman of Philadelphia; Dr. William R. Graham of Richmond; Dr. George P. Guibor of Chicago; Dr. William F. Hughes, Jr. of Baltimore; Drs. Merrill J. King and Werner Mueller of Boston; Drs. F. Philip Koch, Frank Payne and Charles A. Perera of New York City; Dr. James H. Maxwell of Ann Arbor; Rear Admiral Ross T. McIntire of Washington; and Dr. Paul M. Moore of Cleveland.

Further information may be obtained from the Superintendent, Gill Memorial Hospital, Box 2467, Roanoke, Virginia.

#### **Col. Wm. T. Pugh,**

Of Lynchburg, has been made chief of surgical service at McGuire General Hospital, Richmond. He is an alumnus of the Medical College of Virginia and had practiced surgery in Lynchburg for ten years before entering the service.

#### **In Charge of Tuberculosis Work.**

Dr. G. C. Godwin, for a while in charge of the Roanoke City Sanatorium for Tuberculosis, but more recently with the Viscose Corporation in Front Royal, has been appointed by Dr. Porterfield as director of Tuberculosis Control for the City of Richmond. Dr. Carl W. LaFratta has been named medical director of Pine Camp Hospital which comes under the control of this department.

#### **Dr. John Robert Massie, Jr.,**

Recently returned from overseas service in the Army, announces that he is now connected with McGuire Clinic, Richmond, on its surgical staff.

#### **Dr. Paul A. Woods,**

Formerly of Lynchburg, but who has been practicing in South Carolina for the past year, announces that he has located in Waynesboro.

#### **Married.**

Dr. R. Finley Gayle, Jr., and Mrs. Sarah Geer Dale, both of Richmond, November 3.

Dr. George Washington Fishburn, of San Diego, Calif., but now on the resident staff of the Medical College of Virginia, Richmond, and Miss Nellie Mae Embree McIlwaine, daughter of Dr. and Mrs. William B. McIlwaine, III, of Petersburg, October 27.



**Officers in Harvard Club of Virginia.**

Dr. Sidney S. Negus and Dr. Thomas F. Wheel-  
don were elected first and third vice-presidents of  
the Club at its annual meeting on November 1, and  
Dr. Randolph Hoge was named a member of its  
executive committee. All are of Richmond.

**Dr. William F. Beckner,**

Huntington, W. Va., has been elected president  
of the West Virginia State Conference of Social  
Workers for the coming year. Dr. Beckner has a  
number of friends in this State, having held mem-  
bership in the Medical Society of Virginia since he  
practiced in southwestern Virginia for several years  
shortly after graduation.

**The Seaboard Medical Association of Vir-  
ginia and North Carolina**

Is meeting at the Pinewood Hotel, Virginia Beach,  
December the 11th, 12th and 13th, under the presi-  
dency of Dr. A. A. Burke of Norfolk. Dr. Thomas  
Parran, Surgeon General of the U. S. Public Health  
Service, will address the opening session. At the  
following sessions there will be a number of papers  
on interesting subjects, including a Psychiatric  
Symposium. A banquet and ball will be held on  
the second evening.

Dr. Clarence Porter Jones of Newport News is  
secretary of the Association.

**Dr. Joseph Krimsky**

Has taken an office at 912 West Franklin Street,  
Richmond, for the exclusive practice of hearing con-  
sultation and the prescribing of hearing aids.

**Blood—The Journal of Hematology,**

Will make initial appearance in January. De-  
voted exclusively to the field of the blood and blood-  
forming organs, the new periodical will serve a  
notably advancing branch of medical practice and  
research. Dr. William Dameshek of Boston is  
editor-in-chief, and Dr. George R. Minot of Boston  
consulting editor. An advisory editorial board has  
been named from among ranking specialists to rep-  
resent all aspects of hematologic work. Editorial  
offices are at 25 Bennet Street, Boston, and business  
affairs will be in the hands of Grune and Stratton,  
381 Fourth Avenue, New York, who will publish  
the journal.

Illustrations will be an important feature, and  
will include photomicrographs and elaborate color  
plates. The journal will be published bimonthly,

constituting an annual volume of approximately 500  
pages. Monographic supplements and special sym-  
posium numbers will also be issued.

**Dr. Julian B. Doss,**

Formerly of Pen Hook, but recently returned to  
civilian status from the army, has resumed the prac-  
tice of medicine in South Boston.

**Dr. Luther B. Lowe,**

Also recently released from service in the army,  
is opening his office for practice in Pearisburg.

**Dr. J. M. Emmett,**

Clifton Forge, has been appointed by Governor  
Darden to the Board of Visitors of the University  
of Virginia, succeeding the late James H. Corbitt  
of Suffolk.

**Associated With Drs. Coleman and Meredith.**

Dr. Charles E. Troland will become associated  
with Drs. Claude C. Coleman and John M. Mere-  
dith on December 15, for the practice of neurological  
surgery. Dr. Troland has received his discharge as  
Major in the Medical Corps, Army of the United  
States, after having served about three years with  
the 18th General Hospital (Johns Hopkins Unit)  
in the Pacific and India. Since his return to this  
country he has been assistant-chief of the neuro-  
surgical section at the McGuire General Hospital.  
Dr. Troland is a native of Fredericksburg and was  
graduated from Johns Hopkins Medical School  
after completing his pre-medical work at Hampden-  
Sydney.

**Dr. T. Addison Morgan**

Has just returned from Karachi, India, and is  
again at Raiford Memorial Hospital, at Franklin,  
where he will head the department of radiology of  
the clinic staff. Dr. Morgan entered the service in  
1941 and was director of the department of radiol-  
ogy at Fort Story for several years before going to  
India.

**Wanted—**

A laboratory technician. Apply to Dr. William  
H. Higgins, Medical Arts Building, Richmond,  
Va. (*Adv.*)

**For Sale:**

Used Westinghouse 30 M. A. Shock-Proof X-ray  
Machine with fluoroscope. In good condition. Price  
\$600. Address "X-ray", care this Journal, 1200  
East Clay Street, Richmond 19, Virginia. (*Adv.*)

**Wanted:**

Residents in mixed residences. \$150.00 monthly with full maintenance. Discharged veterans only. 200-bed hospital. Address: "Superintendent, Riverside Hospital, Newport News, Va. (*Adv.*)

**Wanted:**

Physician to practice in Stafford County, Virginia. Population 10,000. Only one physician in County. Will offer financial aid to establish. Write to: E. L. C. Derrick, Secretary, Public Health Association, Stafford, Va. (*Adv.*)

**Wanted:**

A copy of Vaughan—Practice of Allergy, 1939. Will pay any reasonable price. Dr. S. Brandt Rose, 103 East Levering Mill Road, Cynwyd, Pa. (*Adv.*)

**For Sale:**

Doctor moving to another location, wishes to sell his home and office in small town in central part of Virginia. Address "Doctor", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

**Established Hospital for Lease.**

A Sanatorium for nervous, mental, alcoholic and drug cases doing an excellent business to a reputable physician or medical group. Dr. E. W. Stokes, 923 Cherokee Road, Louisville 4, Kentucky. (*Adv.*)

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## Obituaries

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**Dr. James Louis Early,**

For many years a prominent physician and surgeon in southwest Virginia, died September 1, after a brief illness. He was a native of Carroll County and in the seventieth year of his age. He graduated from the former University College of Medicine, Richmond, in 1901, and practiced for a time at Galax before moving to Saltville, where he was for twenty years surgeon for the Mathieson Alkali Works. Dr. Early moved to Radford in 1926 and had taken an active part in the life of that community. He was a member of the Medical Society of Virginia, the Southwestern Virginia Medical Society of which he was a past president, a charter member of the Radford Kiwanis Club, a Mason and Shriner. His wife survives him.

**Dr. Francis Whittle Upshur,**

Well known Richmond physician, died October 25, his health not having been good for sometime.

He was a son of the late Dr. John N. Upshur and was born in this city, seventy years ago. Upon completion of his academic education, he studied medicine at the Medical College of Virginia, graduating from that institution in 1897. After an internship at the U. S. Marine Hospital, Boston, he returned to Richmond for private practice until the outbreak of World War I, when he entered the medical corps of the Navy. Upon returning from service, he again located for practice in Richmond. Dr. Upshur served as the first full time venereal disease officer in Richmond and was later on the staff of Eastern State Hospital at Williamsburg. He returned to Richmond about a year ago and was associated with the medical staff of the induction center in this city to the time he became ill. He was a member of his local and State medical societies and of the American Medical Association. His wife survives him.

**Dr. William Kenneth McCoy,**

For many years a practicing physician of Louisa County, died at his home near Gum Spring on October 30th. He was a native of Louisa County and seventy-two years of age. Dr. McCoy graduated from the Medical College of Virginia in 1900 and located in his native county for practice. He is survived by a son, two grandsons and two sisters.

**Dr. James S. Gamble,**

Of Lincolnton, N. C., and his wife were both killed instantly on November the 4th, at the Charlotte, N. C., airport, when their private plane crashed as it came in for a night landing, as Dr. Gamble was apparently trying to find a runway in the darkness. Dr. Gamble graduated in medicine from the Medical College of Virginia in 1943 and served an internship in a Richmond hospital. At the time of his death, he was head surgeon at the Lincolnton Hospital.

**Major John Edwin Adams, M.C., A.U.S.,**

Of Los Angeles, was killed in action in the North African area, January 24, 1944. He was a graduate in medicine from the University of Virginia in 1936, following which he interned at the Virginia Mason Hospital, Seattle, Wash. After that he served a residency at the University of Virginia Hospital, and also at the Children's and Los Angeles County Hospitals. He entered the Service as a first lieutenant in August 1941.

# In Meningitis

**I**N the management of meningitis of pneumococcic, meningococcic, streptococcic, and staphylococcic origin, penicillin therapy presents advantages which in the minds of many observers\* make it the treatment of choice, to be instituted in adequate dosage as soon as diagnosis is established. Because it is virtually nontoxic, penicillin may be given in effective amounts as long as required, intrathecally as well as systemically. Its therapeutic efficacy appears to be considerably greater than that of the sulfonamides, reducing mortality rates appreciably.

\*McCune, W. S., and Evans, J. M.: Intraventricular Penicillin in the Treatment of Staphylococcic Meningitis, J. A. M. A. 125:705 (July 8) 1944.

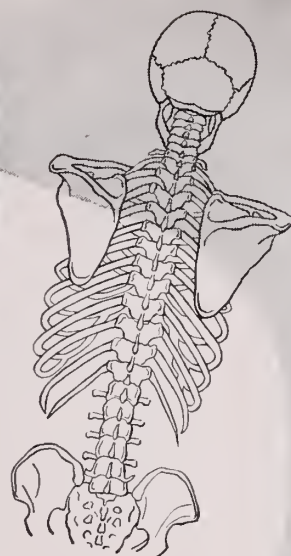
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MacNeal, W. J., and Pease, M. C.: Fulminant Meningococcemia Treated with

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Rosenberg, D. H., and Arling, P. A.: Penicillin in the Treatment of Meningitis, J. A. M. A. 125:1011 (Aug. 12) 1944.

Sweet, L. K.; Dumoff-Stanley, E.; Dowing, H. F., and Lepper, M. H.: The Treatment of Pneumococcic Meningitis with Penicillin, J. A. M. A. 127:263 (Feb. 3) 1945.



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In meningitis, when penicillin is given intrathecally as well as systemically, the state of purification reached in Penicillin-C.S.C. is especially appreciated. The reactions to penicillin, attributed by many investigators to inadequate purification, are minimized when Penicillin-C.S.C. is used. Rigid laboratory control, and biologic and bacteriologic assays, safeguard the potency, sterility, nontoxicity and pyrogen-freedom of Penicillin-C.S.C. For this reason, and because its large production spells adequate supplies as needed, Penicillin-C.S.C. has been given preference in many of the country's outstanding hospitals.

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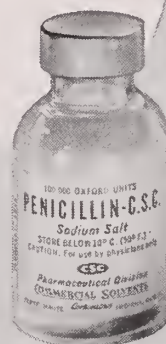
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